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BETTER FRUIT

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*An observation of interest to owners
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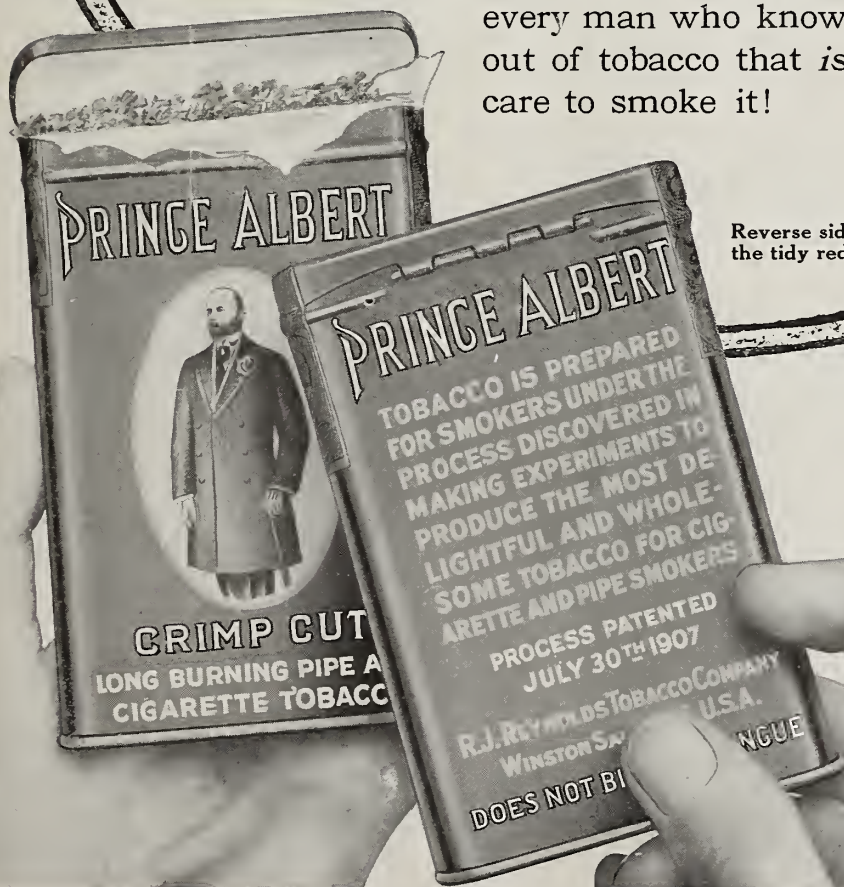
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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Physical Handling of Fruit—Fruit Grades

By C. I. Lewis, Professor of Horticulture, Corvallis, Oregon

(Continued from last issue.)

GENERALLY speaking, the fruit growers of the Northwest have adopted three grades. These are termed Extra Fancy, Fancy and Choice. Occasionally a fourth grade known as "cookers," which is sold locally, is handled, and sometimes a special grade which would handle for fancy fruits which are otherwise perfect except for a little scab or a few hail marks. The tendency in this country, however, is to do away with the words denoting grades, and substitute therefor certain brands; such, for example, as the Blue Triangle as the best brand, Red Triangle as the second brand, the third grade generally being simply marked C. Experience seems to teach that this is pretty good practice. We have still, however, a big problem in determining the method of packing and handling our third grade fruit; in determining whether or not our system could be changed to advantage, or whether or not a different package than the regulation box could profitably be used.

A great deal of hard work has been done in the Northwest in the past few years in attempting to establish grading rules which will be accepted by all the communities. The problem has become greatly complicated, however, because there are about twenty varieties of apples commercially grown, and these grow to a different degree of perfection under various climatic conditions found in our region. It seems very desirable, however, that serious attempts be made to standardize the grades, and to see if it is not possible for the various fruit sections to come to a little clearer understanding on this subject. We all realize very keenly that we must absolutely maintain our standard or else go out of the apple business. The minute the Pacific Northwest lets down on its grading, troubles will begin to accumulate, and complications such as we have never experienced are to be expected. It may be found that with some varieties certain exceptions may be allowed. As an example we might come to an understanding as to the amount of scab to be allowed in a second grade pack of Yellow Newtowns. Shall we allow some scab or must such fruit be put up as a special pack? The consumers' tastes and desires on this subject should be worthy of consideration, and if the market will take a certain kind of fruit packed in a certain way and pay the price, and prefer it over the same varieties grown in other parts of the country, such a classification or grading certainly must be generally acceptable. For example, the English market, which con-

sumes the greater part of our Newtown crop, should determine to a large degree the grade and pack of that variety.

The Fruit Growers' Agency, Incorporated, is making a serious effort to help the growers of the Northwest in the grading of the fruit. A committee on physical handling of fruit has been appointed, which is as follows: S. V. Beckwith, Medford, Oregon; C. E. Chase, Walla Walla, Washington; Charles L. Hamilton, North Yakima, Washington; Sam G. Campbell, Hood River, Oregon. Advisory members: Prof. C. I. Lewis, Corvallis, Oregon; Prof. C. C. Vincent, Moscow, Idaho; Prof. O. M. Morris, Pullman, Washington; Prof. M. L. Dean, Missoula, Montana. All members of this committee will be delighted to hear from shippers, growers and packers of fruit concerning ideas as to improvements that could be made in the grading of our fruit. Whatever rules of grading are adopted must be practical working rules, which can be lived up to. It must be borne in mind that the buyer is going to hold the grower up to the grades he himself has adopted, and that if the Northwest adopts certain rules and regulations concerning the grading of fruit, the large buyers all over the world are going to reject or accept our fruit on the basis of our own advertised grading rules.

No system of grading which we may adopt will really be worth very much without a very efficient system of in-

spection. So far the states are acting separately along such lines. Some seem to have fairly good laws, and others not very good. Most of our money at present is spent in inspecting orchards, inspecting the fruit which is sold in our local markets, and in watching very carefully the interstate shipments of nursery stock and fruit which is to be handled for local consumption. All horticulturists realize that this is good work, but we are also beginning to realize that it needs to be greatly extended, and after all, as far as the horticulturists themselves are concerned, the success of the business and the greater aid will come from the inspection of the fruit shipped out of the state to the world's markets. If we can standardize the carloads of fruit shipped out it will do more to help the horticultural industry of the Pacific Coast than any other single factor. To inaugurate a system of inspection of this kind, however, means very close organization and considerable money. Just how this can be accomplished or what the machinery for handling such inspection will be are questions upon which the growers have not yet expressed their opinions. Some of the states of the East are passing laws to cover this subject. There are also national laws for barrel grading. California has made wonderful progress in the past year in the enactment of two laws. The first has to do with the standardization of fruit



FIGURE 2—A good type of cement and tile constructed house. Management is also making the best of advertising possibilities.

packing, and it is said that it helps the fruit industry of California more than any other single bill that has been passed in late years. This bill is mandatory. The second bill has to do with the packing of apples. This is entirely optional, but it undoubtedly will be accepted by a large number of the growers, and if it is, it will mean very much to the California apple. Possibly it will be impracticable for the horticulturists to try to pass through the Legislatures of the several Northwestern states this next winter laws and bills which will cover this point, because they will mean appropriations, and the spirit of the country has not been favorable to such appropriations. At least, they can only be brought about by very energetic work on the part of the fruit growers. They will have to show a keener interest than they have been showing in the past four years if such legislation can be brought about. Possibly the Fruit Growers' Agency may be able to get all shippers affiliated with this organization to agree to some efficient form of inspection. The system used by the Wenatchee-North Central Growers' League is one of the best which has been tried on the Pacific Coast. This inspection was conducted at an expense of one cent a box, and seems to have been very efficient. The great difficulty in carrying on inspection work seems to be finance on the one hand and maintaining the confidence of all parties on the other. Personally we believe that perhaps the

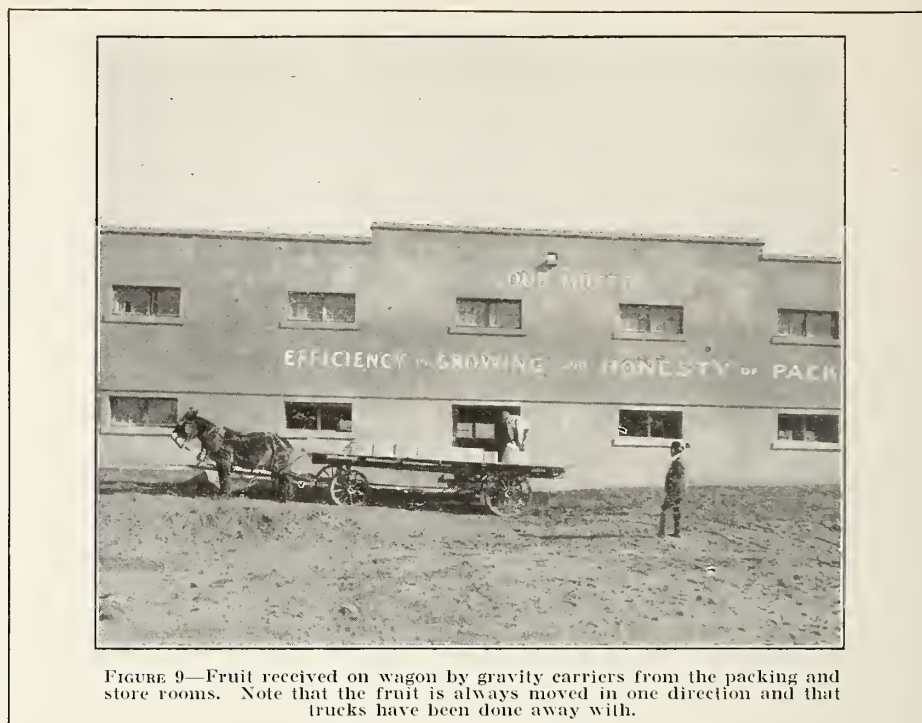


FIGURE 9—Fruit received on wagon by gravity carriers from the packing and store rooms. Note that the fruit is always moved in one direction and that trucks have been done away with.

best results could be obtained if we had national inspectors, who were under the authority of the United States Department of Agriculture.

We are not going to attempt in this article to discuss packs and packages in detail. It is well to know, however, that the adoption of one package is a step in the right direction; also the

elimination of the offset and most of the square packs; and that limiting the number of diagonal packs to be used is very desirable. We have had a tendency to use too many packages and too many packs. This has complicated the situation and hasn't really helped us commercially in any sense.

Continued in next issue

Are We Growing Fruit Successfully?

By J. Howard Wright, President Washington State Horticultural Society

I BELIEVE there are certain facts that we have overlooked in figuring the reason why we have not been more successful in the fruit business. Too many of us are prone to lay the blame on the other fellow, believing that we have done all when we have delivered our crop ready for shipment to our marketing agency or to the cash

dealer. But have we? Are there not many things that we might have done that would have made better quality of fruit?

Now I am going to enumerate some of our faults as they seem to me. If I am too hard in some of my criticisms I hope you will bear with me and take no offense, for I am very much interested

in this business. Every dollar I have has been earned in it, every dollar I possess is still in the game, and I hope is going to remain there. One of the very worst things that ever struck the Northwest was the boom prices in fruit lands a few years ago, resulting in many people buying land at fabulous prices and setting to fruit. No doubt at the time the prices did seem reasonable when compared with the returns to growers in 1907 and in 1911. But we must remember that the tonnage moving from the Northwest at that time was very small and of course found very good prices; also times were very good then and people were ready to part with their money for big red apples. But at the present time conditions have changed very largely. Times are hard. A terrible war is on hand. Money is tight and people are not so willing to barter their money for a red apple. Consequently fruit lands have fallen in value, and on account of the planting of so many orchards the tonnage has increased immensely. Therefore we are not getting rich so quickly as in our dreams of a few years back. Sheriffs' sales, foreclosures and the like are the order of the day. Many people are condemning the fruit business and seeking some other means of getting rich quickly, and why?



FIGURE 11—Type of house being erected in Southern California by the orange growers. Note the large shaded loading platforms and also the provisions made for good ventilation in this building. Photograph by courtesy of Dr. Leon Batchelor, Riverside, California.

Thousands of acres of farm land suitable only for general farming have been set to fruit trees, with the result that rosette, root-rot, collar-rot, blight and many other diseases have destroyed and will destroy these trees. If you own orchards in such a location the best thing to do is to quit trying to grow fruit and grow something that will pay. No doubt you have paid a fruit land price for land suitable for growing hay, but charge this to experience. Fortunately nature has been very kind to the fruit grower in the Northwest in that no matter how he seemed to care for his orchard, yet he was able to reap quite a benefit from it. But that time has passed. Fruit tree diseases, insects and pests of various descriptions are now quite prevalent and the grower is kept busy from the beginning to the end of the season fighting them. It is absolutely necessary, in order for you to be a successful grower, to get right down to hard work and keep after it the whole year round. It is most necessary to give your time and attention to any and all of the various phases of fruit growing. Too many of us do too much of our orchard work by proxy, leaving the other fellow to do the work and then expect results. Nine chances out of ten we do not get them, and then we condemn the business, when as a matter of fact there is no one to blame but ourselves.

If you are not willing to go up against hard work stay out of the game. Do not maintain an orchard that is of no value to you and is a menace to the man who is growing good fruit. There are too many of them now. Every time you fail to spray or cut out blight lessens your chances of success and also that of your neighbor.

We will take the season just past. The complaint has been that there never have been so many worms and scale. True, we must admit that the season has been very favorable for them. But how many growers started out last spring with a determination to win at all hazards. I will guarantee that today that grower has no complaint on the net profits on his crop. Too many of us have been caught napping. Asleep at the switch. Start out at the beginning of the season with the idea that your orchard will bring you a million and that if you do not get in and work you cannot get it.

Along with my fruit growing I do some buying, and in canvassing a great many orchards in my locality I was struck with the evident lack of care so many of them had had. Very little pruning, poor spraying, no thinning. I lay this condition to several causes. One is that growers did not have enough money to give the orchard the care it should have had. Another, the growers had lost heart, and consequently had neglected to do things that they should have done, with the result that they are no better off than they were last year, when there was such an immense crop and no price.

Today go to your county and state fairs and look at the displays. Do you see a preponderance of fruit exhibits?

No. The exhibits run largely to live-stock. Why? Because that business is more in the limelight for the reason that it appears to be paying better. But is that any reason for the fruit grower stampeding to that line of farming, giving up what he has learned by costly experience? Leaving the one at low tide and going into the other at high tide will never get him anywhere. If your location is right, stay with it. Some day the fruit will be back in its own and the other may be down. In 1896 a very large apple crop was produced, with the usual result—thousands of barrels went to waste; but in the course of a few years there was not such an overproduction, but rather the very reverse. What was the result? The man who stayed by his orchard, carefully tending it through the poor years, was in a position to take advantage of the better prices when they came. That time is going to come again in the apple game and it may not be so very far ahead. Better have your lamp trimmed and burning by having your orchard trimmed and sprayed.

In the management of all business there must be the greatest possible elimination of waste. How much do we as growers follow this idea? Do we clean cultivate our orchards year after year, destroying the humus in the soil without putting something back, thus starving our trees until we produce small, unsalable apples? Or are we seeding them to a cover crop, thereby putting humus and life into the soil, building it up, and thus giving the trees health and vigor? Humus is the yeast of the soil. Without it the soil is dead, of not much more value than so many ashes.

How many of us produce on our ranches as nearly as possible all the things that we eat, by keeping a cow or two, a few hogs, chickens, and maintaining a garden? Not too many of us. We should have all of these and should raise a crop of alfalfa to feed them. Besides, all of us have more or less waste in cull fruits. As there seems to be not much profit in a by-product, let us make a by-product of the hog. By feeding him this waste, together with green alfalfa and alfalfa hay, and purchasing a small amount of grain to go along with it, a pretty fair quality of pork can be produced at a profit. It beats 25 cents a pound for bacon. Another item: Hogs running at large in an orchard cannot be beaten as a means of fertilizing year by year. Year by year the population of this country increases and the demands upon our soil become heavier and the exports of foodstuffs become smaller. Our farms are becoming more and more subdivided, thus requiring more profits to the acre, as there are more individuals to support. With this idea in view, is it not very necessary that we keep our soil in prime condition? In talking with a fruit grower from Connecticut I was informed that the cost of preparing the land in order that alfalfa may grow on it is \$75 per acre. Think of that. Here in the Northwest all that is needful is to purchase the seed, sow it, water it,

and lo! we have a crop. Do we want our soils to get in such a condition that it will cost a small fortune to put them back to what they should be?

There was an extensive complaint the past season because of sunburnt fruit. Have you noticed that this happened largely in cultivated orchards, especially on light colored soils? The sun beating down on the ground and reflecting back up made heat strong enough to scorch the apples. However, this was not the only reason for sunburnt fruit. Trees that have been neglected by lack of pruning produced long willowy growths, and, overloaded as they were this season, lopped over the ground, exposing the fruit to the glare of the sun, with the result that the apples were ruined for market. Systematic pruning and thinning would have helped immensely.

We hear a great deal about the dishonest commission men. There are such men, and the manner in which the commission business is carried on gives them the opportunity. But what about the grower? Is he always honest? Not by any means. How many times will he bring in the fruit, the red apples on the top but not on the bottom of the box. It is a pleasure to do business with a grower who can be trusted. When he tells you that he has a box of Extra Fancy you may depend upon it that the apples are of that grade, and you pay him from 10 to 25 cents more per box than the man whom you must watch. The man who puts up his fruit right and sells it as represented is most likely the man who is growing his fruit right, and, as a whole, is a success in his line. Would that there were more of these people.

Right here is where I wish to criticize our laws made to regulate our business of raising fruit. Last winter at Olympia a great deal of time, energy and money was spent in getting a bill through that would protect the grower who would produce good, clean fruit. The Legislature passed the present horticultural bill. The honest grower was delighted, because he thought he would have ample protection against the man who grows worms and scale instead of apples. But has he had protection? No. Hundreds of cars of infected fruit have been shipped out of the state, helping to lower the price on the good. It is poor satisfaction to have spent long, tedious hours spraying, endeavoring to live up to the law as interpreted by our inspectors, and when the crop is ready to deliver find that his neighbor who did not spray is able to sell his crop, bugs and all, and possibly sooner than the man who puts his up right. Our horticultural commissioner tells us that it is only for this season, because of the scarcity of apples; but what about next year? Can the inspectors put up the bars next year after having let them down this year? I don't see how they can. The man who sprayed his crop this season because he thought he must will not be very much inclined to do so next season, after he has found that his careless neighbor who did not spray has been able to dispose of his junk this

fall. The only relief seems to lie in the direction of legislation by those states into which we are able to ship culls restricting the sale of same. I do not wish this to be construed to mean that I am condemning our inspectors, but I believe that a serious mistake has been made. Our inspectors as a whole are a conscientious, hard working lot of men, and growers should be in closer touch with them.

Another point I wish to make: The average grower, after he has produced a crop does not know what value to put upon it. He probably figures that he has paid so many hundred dollars per acre for his land, that it has cost him so many cents per box to prune, spray, harvest, pack and deliver, and so many cents for profit. This is perhaps as far as he has figured out what the price of a box of apples ought to be, or what he thinks it ought to be. He is very likely ignorant as to how many apples there are in other districts, or as to the condition of the crop in other states, which is information he should have in order that he may make his own deductions. It would seem that a man who produces an article ought to know something of what he might expect to get for that article when he puts it on the market. But many of us expect to get that much because the real estate man told us that we could get that much, at the time we bought our land, for we grow the only big apples. We should remember that the whole Northwest produces only a small percentage of the entire crop of the country. The average business man of the city meets other business men on the car going to his office, at luncheon, at clubs and in numerous other ways. Here they discuss business and each is benefited by the other's experience. It is not so with the farmer. He gets out early in the morning, goes to work in the fields, at noon he comes into the house and eats his dinner, and then returns to work. At night he comes in tired after his day's work and is soon off to bed. This may happen day in and day out. He stays so close to his duties that he loses touch with the world. Consequently he does not know what the other fellow is doing. Right here at this meeting there should be more growers to find out what the other fellow is doing. It would be far better for all of us to occasionally take a trip to the large centers in order that we may see how our produce is handled. It is a poor observer that would

not get his money back from such a trip.

We are told that as growers we need only know how to produce a crop and that it is not necessary for us to know anything about the selling end of it. Such advice is a good thing for the man who wants to be paid for his services in handling our crops. Watch the other fellow. If he is producing his crop at a less cost than you, get next to him and find out how he does it. Then go him one better if you can.

Although the fruit business is a very hazardous game, not only in the growing, but also in the handling, it is a very

interesting one. Let us all put our shoulders to the wheel. Let us put more energy and care into our pruning, spraying, thinning and packing. Let us bring our fruit up to the highest standard possible, making the box apple of the Northwest so superior to the barrel apple of the East that the freight rate will be no handicap to us. Success will be ours and the dreams of a few years back will become a reality.

[Note—The Washington State Horticultural Society will hold its annual meeting in North Yakima in December.]

California Walnut Grove Soil Management

By Dr. L. D. Batchelor, University of California Citrus Experiment Station, Riverside, California

A REVIEW of the methods employed by some of the most successful California walnut growers may be of interest to the readers of "Better Fruit." Clean culture is practiced in the great majority of the walnut sections of this state. The maintenance of sufficient soil moisture is an important factor and clean cultivation is one of the chief means of promoting this conservation. An increasing proportion of the growers are using winter cover crops as a means of keeping up the humus of the soil and adding nitrogen through the leguminous crops. Melilotus indica, field peas and vetch are among the leading crops used for this purpose. By seeding just before or immediately after harvest the above cover crops will be nearly waist high by the last of March or the first of April. At this time they may be either plowed under or disked. The disking usually requires the use of a small tractor or six to eight horses on an outfit, depending upon the soil conditions, crop, and size of implement used. In maintaining the humus of the soil the preservation of the walnut leaves is of great importance. In sections where the leaves are likely to be blown off the grove, furrows may be plowed between each row of trees and thus cause the leaves to bank up in drifts. Shallow cultivation is kept up periodically through the summer, especially after each irrigation.

The number of irrigations, amount of water applied and season of application vary widely, according to the natural rainfall, nature of the soil and general climatic conditions. Whereas the growers in some of the dry inland sections,

as for example the San Jacinto Valley, apply six or seven irrigations a season from April to October, other regions, as the Whittier district, may apply only one or two irrigations per season. Each grower must be a student of his own conditions. The trees should not suffer for want of water during the growing season, nor during the early winter before the rains begin. Groves which become too dry before watering in the summer are very apt to shed their leaves at harvest time and make the gathering of the nuts more difficult. Drying out the latter part of the growing season also seems to be one of the contributing factors which may cause the nuts to fall with the shucks on, and thus cause extra expense in harvesting. This trouble is more often encountered on sandy soils and on those underlaid with a porous subsoil, thus having a low water-holding capacity. Frequent irrigations, with only a medium amount of water, would likely be advisable on such soils. If the soil is excessively dry when the trees go into the dormant condition there seems more liability of winter-killing in the form of die-back in the tops of the trees. To prevent this many of the groves are watered the last of October or first part of November. Some years the early winter rains make this unnecessary, but this is hard to foretell. Two irrigations during the average growing season, one, say, the first week in July, and the other the third week in August, will be sufficient on the typical walnut soils, the deep, rich, heavy loams. It is seldom advisable to give anything but very general advice on the matter of irrigation.

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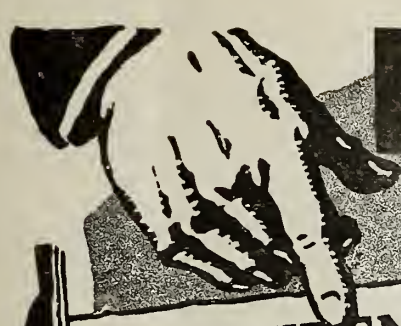
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PROOF that Blasting the soil pays fruit growers

EVIDENCE

"In preparing the ground for the planting of trees the *Rural Press* recommends the use of powder." **PACIFIC RURAL PRESS, San Francisco.**

"We advocate the use of explosives for loosening up compact soils and hardpan in tree planting, knowing the value of such work." **FANCHER CREEK NURSERIES, Fresno, Cal.**

"The use of a good explosive is of great benefit in planting an orchard, as the ground should be loose enough to allow roots to go to their natural depth easily." **BENEDICT NURSERY CO., Portland, Ore.**

"We favor blasting holes for trees where the soil is heavy. Powder will loosen the soil, giving it a better chance to become aerated, as well as making it more retentive of moisture." **OREGON NURSERY CO., Oregano, Ore.**

"My orchard has made excellent growth, due to the fact that I used dynamite, breaking up the soil and making excellent beds for the roots. If I were to set another orchard I would not think of doing so without blasting each tree hole." **T. A. JOHNSON, Boise, Idaho.**

"We have used explosives in digging tree holes in the hard talche subsurface layers which occur here. We find this cheaper than the use of pick and crowbar, and more satisfactory in that the soil is shattered deeper than the hole could be dug." **GEORGE T. FREEMAN, Arizona Agricultural Experiment Station, Tucson.**

"The use of Farm Powders in the orchard industry is rapidly being learned and appreciated. The worst looking orchard I ever saw, suffering from a lack of drainage, was blasted two or three years ago, and now it looks as fine as any other well kept orchard in this valley." **E. H. SHEPARD, Publisher "Better Fruit," Hood River, Ore.**

"We have observed many cases in which powder has been used for blasting beds for fruit trees, invariably with great success. The use of explosives is of material benefit when the soil is inclined to be rather shallow and underlain with a hard subsoil. There are few soils in which blasting cannot be done profitably." **THE FRUIT GROWER, St. Joseph, Mo.**

"I have done a great deal of orchard planting and use powder for making the holes. At first it was used chiefly on heavy hardpan or other soils that were difficult to prepare with the spade, but is now used on all classes of soil. If I were planting trees even in light soil, easily handled, I should prepare all the holes with powder. Trees so planted make extraordinary growth." **FRANK FEMMONS, Oakhurst, Cal.**

"Generally speaking the growth of plants depends upon the condition of the soil into which the roots penetrate. If the depth of loose soil is too limited or the surface water is permitted to stand too long, the growth is impaired. Explosives properly used in such instances have invariably relieved the condition and resulted in excellent growth. The yield is often three times as great on blasted soil as from those untreated in the same vicinity." **ROSECROFT NURSERY & FRUIT FARM, Sumner, Wash.**

"The O'Connor place orchard near Los Gatos in the Santa Clara Valley, California, was blasted in 1913. During the previous six years the largest crop was 3,900 pounds. In 1914 after the blasting, the crop was 8,000 pounds, more than double. It was a dry year, too. Where there were from 30 to 40 per cent. of 'drops' in the orchards on both sides, the O'Connor place lost only about 5 per cent. Prunes from the blasted orchard averaged much larger and the trees made a better growth and retained their foliage a month longer than the orchards on either side." **JOHN A. GALPIN, Los Angeles, Cal.**

"My orchard was planted three years ago and all trees were of even age and size. I intended to blast the whole orchard but ran out of powder and finished the small balance without it. This enabled me to compare the growth of the trees and satisfy myself that the expense was justified. The trees that were planted in blasted ground show a growth of 75 to 100 per cent. over the trees that were planted in ground not blasted. They also appear healthier and more satisfactory in every way. I have just bought 1100 more prune trees and would not think of planting them without preparing the ground with powder." **HERMAN H. SMIDT, R. 3, Oregon City, Ore.**

is given by many fruit growers in the accompanying page from the Giant book, "Better Orchard Tillage." These men say that blasting

- enables the trees to root deeper;
- adds moisture storage capacity;
- saves labor and money;
- improves orchards that are not doing their best;
- is always profitable when properly done;
- places the soil in the ideal condition that permits newly planted trees to make extraordinary growth;
- increases the yield of fruit.

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Displacement of Horses by Tractors

[U. S. Department of Agriculture]

IN investigating the value of the tractor from the farmer's point of view specialists of the Department of Agriculture recently obtained from over four hundred owners of tractors in Illinois reports as to the number of horses which the tractor had enabled them to do away with in the farm work. The following analysis of about two hundred reports from typical Corn-Belt farms is taken from Farmers' Bulletin 719, "An Economic Study of the Farm Tractor in the Corn Belt":

Many men look to the tractor to enable them to do away with the use of horses for farm work, at least in great part. To date, however, the tractor has not displaced horses to the extent commonly expected by purchasers, but its greatest advantage, as before mentioned, lies in the fact that it does the heavy work quickly, and thus completes it within the proper season, since it places at the farmer's command a large amount of power when needed.

The tractor does displace horses to some extent, but only in about two-thirds of the cases where it is used on the same number of acres previously farmed. In these instances the horses displaced average only about four, and represent slightly less than 50 per cent of the cost of the tractor outfit. The number of horses displaced does not appear to vary to any great extent with the size of the outfit, about as many horses being laid off after the purchase of a small outfit as after buying a large one. The number will vary under different conditions, however, the principal influencing factor being the number of acres farmed per horse and the distribution of the work throughout the year.

In the Corn Belt horses are seldom displaced on farms where the average tilled acreage per horse is thirty or more. On the farms in Illinois where horses were displaced by the tractor, one horse had been kept for each twenty acres of tilled land. After the purchase of the tractor one horse was kept for each thirty acres of tilled land, or approximately the same as on farms on which no horses were displaced.

There is much work on most farms for which it is neither practicable nor profitable to use the tractor. This is especially true in the Corn Belt section, where cultivating frequently requires more power at one time than any other farm operation. Few if any tractors, according to reports received, are utilized for such work with entire satisfaction, and it is, therefore, necessary to retain a considerable number of horses after the tractor is bought.

A study of the distribution of horse labor on a typical Corn Belt farm indicates that the peak load, that is, the greatest amount of work, comes about the end of May, which is the season when corn cultivating is at its height.

On ninety-two Illinois farms where no change in the acreage was made after the purchase of the tractor, an average of twelve horses per farm had previously been kept. Two hundred and sixty-three horses were displaced on these farms, an average of not quite three horses per farm. On thirty-one, or about one-third, of these farms, no horses were laid off.

The raising of colts is an industry of considerable importance on farms in the Corn Belt, and it would seem natural to expect that where tractors were

bought and the work stock thus relieved of the heavy field work the percentage of brood mares kept would be increased and that the chances of raising more and healthier colts would be enhanced. It was found, however, that on a large group of farms in Illinois the brood mares constituted 33 per cent of the work stock before the tractors were bought, and while the work stock was decreased to some extent after the purchase of the tractor, the percentage of brood mares increased only 3 per cent, thus making the percentage now kept amount to 36 per cent.

Fruit Sun-Scald

Reports from various parts of the state indicate an unusually large amount of injury to growing fruit caused by sun-scald. It is probable that the trouble is so prevalent this season because of the sudden and extreme changes in the weather. When several cool, moist days are followed by high temperatures and high insolation the tissue of the fruit is likely to be so watery that the exposed outer cells are killed. This causes a discoloration of the skin and flesh on the sunny cheek of the fruit and destroys any hope of its ever developing to better than "cull" quality.

What to do to prevent such injury, or to reduce the loss to the minimum after the burning has taken place, is being frequently asked the Department of Horticulture of the State College at Pullman. Of course, the primary cause, the unfavorable weather, cannot be controlled. It is probable, however, that weak trees with sparse foliage are the ones on which the injury is most severe. This would indicate the need of nitrogen-gathering cover crops to improve the soil condition, thus causing the tree to make a better twig and leaf growth.

Since the burned apples cannot develop into good fruit, Professor R. J. Barnett recommends that they be removed from the tree by pulling or clipping, as soon as possible. The work of thinning would cost something at the time, but this expense would be largely balanced to the grower by the lessened cost of picking and sorting the mature fruit at harvest time. In addition, the fruit left on the tree would have increased chances to develop high quality, because of the lightened load. It is the number of seeds produced which represents most closely the tax on the tree of maturing a crop of fruit. Such a thinning may prove to be very valuable if it enables the tree to produce a larger crop during the season of 1917, a normally light fruit year.—Ira D. Cardiff, Director, State Agricultural Experiment Station, Pullman, Washington.

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Growing Cover Crops in Young Orchards

By J. A. Hughes, County Agriculturist and Collaborator, Omak, Washington,
United States Department of Agriculture

A WELL worked out system of cover crops plays two important parts in a young orchard: It builds up the soil by providing humus and other plant foods, and furnishes ready money or equivalent foodstuffs during the expensive and long interval between planting and bearing.

In most sections of the Northwest nearly all orchards planted are planted on virgin sagebrush land. Such land, being generally of volcanic or of glacial drift origin, is very fertile in all plant foods save nitrates and humus; and generally the only supply of such humus has been obtained by the growth of sages and bunchgrasses; as this supply is very limited, rarely lasting growing trees more than two years, the orchardist must provide his soil with this necessary plant food. In the rush and excitement of planting Western orchards many people did not even wait to properly prepare the soil; often strips of sagebrush would be cleared, holes dug, trees planted, and the ground not yet leveled or cleared of the brush between the trees. A lover of artistic swearing would enjoy being in the neighborhood when the first irrigation was being done.

In the Okanogan and Methow Valleys there are approximately 22,000 acres of orchard, the average age being four years since planting. The geological

formation of the entire country is of glacial and volcanic origin and very deficient in humus. Since this country has been recently watered, all of the orchards are very young. The three best orchards in the entire country are six years old and were planted on land which had been alfalfa fields for from ten to twelve years. The soil of these fields will be found to be very rich, easily handled and very fertile. The trees are of wonderful growth, producing heavy crops of very highly colored fruit. In one corner of one of these orchards no alfalfa had been grown, the land being broken up just before planting. The trees on this part are barely two-thirds as large as on the other, and have not produced more than

fifty per cent as much fruit. The entire orchard has been given the same treatment, yet the line showing where the alfalfa was grown can be distinctly followed by the difference in the growth of the trees. Many orchards which are kept clean cultivated and where artificial manures are not used grow well for several years, then they stop growing, become sickly, the trunks have a pale yellowish or reddish hue, the spurs and leaves are scant and small, the entire tree having a starved and retarded appearance. This is one of the indications that the store of humus has become depleted. In numerous instances I have found orchards side by side, one having been cultivated clean and with no application of manure, and the next one kept in cover crops; the clean cultivated one will be sickly, of scanty growth, often full of rosette, while the other will be

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very sturdy, of splendid growth and of much larger size.

In the Okanogan country the favorite soil buliding cover crops are alfalfa and clover. Thirty orchardists are now trying out sweet clover. The best stands of these crops have been secured where the land was first planted in rye, then about the middle of April or just when the rye is in the boot it is turned under,

and two weeks later the land is harrowed, the seed sown and then the first irrigation is given. Sometimes alfalfa is sown in the fall with rye, which is cut in the early summer for hay. The best results, however, have not been secured by this method. During the first six or seven years an orchard should never be sown solid to a heavy rooting cover crop; hundreds of or-

chards in the Okanogan country prove this. A strip at least five feet wide should be kept cultivated on each side of the tree, thus allowing room for the growth of the roots of the young tree. A heavy sod of alfalfa contains such numerous and strong roots that the young trees are choked when planted directly amongst alfalfa. I have in mind the condition of a certain twenty-acre orchard of seven-year-old trees; five years ago ten acres were sown solid to alfalfa and the other ten kept cultivated clean. At the present time the trees in the alfalfa are fully two seasons' growth behind those in the clean cultivated orchard.

The most successful way of handling the alfalfa cover crop is to use the first three cuttings for hay, leaving the fourth on the ground and disking it in in the spring. Where the season is not long enough to produce four crops, the third should be left on the ground as a fertilizer. A point to be remembered is that the cover crop must not be watered too late, as there is great danger of the trees suffering from winter injury by going into the winter in too green a condition. Last spring an orchardist became very irate when he heard me advocating the cover crop system. He said the alfalfa killed his trees. On visiting his orchard I found a ten-acre tract of Jonathans. Seven acres were cultivated clean and three were sown in alfalfa. In the part in alfalfa thirty-eight trees were entirely killed by winter injury, while in the clean cultivated part not a single tree was injured. He irrigated the last time in the clean cultivated part on the 29th of August, 1913, and the part in alfalfa received its last irrigation on the 23d of September of the same year. Numerous other instances have shown that great danger is incurred by the late irrigation of cover crops.

In the more sandy soils vetches have proven very satisfactory, but as the prices of this seed have become prohibitive very little will be used until they are cheaper. One of the greatest problems of Okanogan County is the sandy orchard problem; about 8,000 acres of

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land which is very sandy, almost entirely deficient in humus, has been planted in orchards. The water supply is limited to about two acre feet, which is barely enough for the growing tree. Sufficient manure is not available to supply the necessary plant food, and unless this is supplied the physical condition of the soil will become very weakened. It will become leached or burned out and the growth will cease. The application of commercial fertilizers in concentrated form may temporarily partially relieve this condition, but they never remedy it, and are too expensive for any orchard to afford where returns on investment are desired. The available amount of irrigation water is not sufficient to maintain a cover crop during the summer. This problem has been successfully solved by many orchardists who use the following system:

Rye is sown in the fall and plowed under in the spring while yet in the boot, the orchard is clean cultivated until the middle of August, when it is again sown to rye. This is repeated each year until the fifth year, when alfalfa is seeded in rows two and a half to three feet apart. The alfalfa is kept cultivated between the rows for the first year, thus conserving a large amount of moisture. By the end of the second year a solid sod has formed. The rye builds up the soil sufficiently to hold the scanty amount of irrigation water until the alfalfa obtains a foothold. Where this system has been practiced the orchards appear as oases in a desert, among the other orchards which are clean cultivated. Last summer two orchards where the soil was very sandy yielded four tons of alfalfa per orchard acre and the trees are in splendid condition, comparing very favorably with

those in loamy soil; and in that section alfalfa hay sells for eight and ten dollars per ton. The texture of the soil is so improved that it retains moisture far better than the original and sandy soil. The two acre feet of water seem to go just as far in those orchards as in others where only the sheer sand is found, and the trees are more than twice as large.

Continued in next issue

Railway Wants All Space in Cars Utilized.

The Great Northern Railway is appealing to the apple shippers that they load cars with more than the minimum 630 boxes, to mitigate the car shortage. Nearly every car now rolling is loaded five tiers. The railway feels that by extra effort the cars can be loaded either six or seven tiers high. A tier consists of 126 boxes. The railway feels that if the shippers load heavy, whenever the buyers will permit, it will help the situation considerably. — Wenatchee Advance, October 19, 1916.

Apples Go Abroad.

Washington apples comprise one of the large items of the cargo of the O. S. K. steamer Tacoma Maru, which sails from Tacoma to Manila this week. The consignment amounts to 1,500 boxes, most of which are from the Yakima district. The fruit is consigned to American firms in Manila who have a large number of former Pacific Coast people as their customers. They are anxiously awaiting the arrival of the Washington product. The apples will reach the consumers in time for their Thanksgiving dinner.

The Okanogan Valley of British Columbia is shipping fifty carloads of apples to Australia and New Zealand this fall. It is also sending its product to Europe, Asia and Africa.—Wenatchee World, October 19, 1916.

Northwest States to Co-operate With Federal Government.

A committee of nine, three each from Washington, Idaho and Oregon, will be immediately appointed by Governors Lister, Alexander and Withycombe to draft a plan by which the executives of the three Northwestern states may co-operate with the Federal Government, acting through its Office of Markets, to promote a wider demand for Northwestern apples. This was the result of the conference called by T. O. Morrison, head of the horticultural work in the State of Washington, and attended today by the three governors, fifty growers and shippers of the Northwest. Paul Weyrauch, president of the Fruit Growers' Agency, Incorporated, which was formed to further the Government plan, opened the conference and then retired in favor of Governor Lister, who presided. George T. Reid, assistant to the president of the Northern Pacific Railway Company, urged united action by growers and shippers of the three

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states to secure a standardization pack and pledged the support of the company to carry out the plan of co-operation along lines the committee may suggest. All agreed that judicious advertising was the key to the problem. Governor Alexander suggested that the situation might warrant the executives asking their Legislatures to make appropriations for advertising purposes. Alexander proposed the slogan, "As yellow as an orange, as pretty as a peach and as healthful as an apple." — Wenatchee World, September 22, 1916.

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of Congress of March 3, 1879.

Varieties and Grades That Do Not Pay.—For many years different districts and different growers in different districts have been producing varieties that do not pay the cost of production, and in addition shipping out grades of some varieties that do not pay the freight. It is also true that many apples have been shipped of some varieties that were too small to be of any commercial value. These are serious matters and deserve the attention of every fruit grower of the Northwest. When a fruit grower ships fruit that does not pay the cost of harvesting and transportation he not only does not make money, but crowds the market with undesirable stuff which prevents getting satisfactory prices on good grades and good sizes, pulling down the prices by crowding the market with undesirable grades and sizes. It is understood this subject will be discussed at the National Apple Show. Every district should collect data from their shipping association and selling concerns in the way of prices obtained on poor varieties, low grades and small sizes, and present them at this meeting, so that all growers who are not well informed can get the benefit of this information. Every association and shipping concern should have some man in their office prepare this data in typewritten form ready to be delivered when the discussion on this subject takes place at the National Apple Show in November.

The Washington State Horticultural Society meeting will be held in North Yakima January 3, 4 and 5. Washington is the largest fruit-producing state in the Northwest. Yakima and Wenatchee are two big districts, and both should be well represented. In fact, all districts in the State of Washington should attend the State Horticultural meeting, because every subject of vital importance in growing, producing and harvesting fruit will be up for discus-

sion. In all probability there will be addresses on Marketing, Advertising, etc., which will be of inestimable value. The program has not been completed, therefore we are unable to publish it in this edition, but we hope to be able to have it appear in the December issue.

The Ninth National Apple Show at Spokane is going to be one of the greatest events in the history of the Northwest, on account of the splendid program arranged. Practically every subject of vital importance before the fruit growers will come before the conference which is to be held, which will be followed by a general discussion. The program is so important and the problems coming up for discussion so important that every fruit grower that can get away to attend the Apple Show should do so without fail. The expense will be small, the benefit large, and the volume of information to be obtained of inestimable value. Probably one of the most important subjects will be Marketing; another will be Advertising. It is to be regretted that a complete program has not been printed to be published in this edition, but take the word of the Editor of "Better Fruit"—this will be the best program that has ever been scheduled by the National Apple Show of Spokane for the benefit of the fruit growers.

Apple Prices.—Apple prices are running fair, but many growers will probably be disappointed, as the prevailing prices are not running as high as growers anticipated. This is to be regretted, as the apple growers need the money. Many will be unable to harvest their entire crop on account of early maturity, much of it dropping, which will shorten up the actual shipments. The lack of cold storage facilities has compelled growers to push their fruit on the market as fast as cars were obtainable. When markets are crowded the influence is demoralizing on prices, and lack of cold storage facilities in the West and the lack of proper distribution in the East and shortage of cars are all to be regretted, but having been unavoidable we must profit by this experience and be more fully prepared in future years.

The Oregon State Horticultural Society will hold their annual meeting early in December, the date to be given later. The Oregon State Horticultural Society meetings have always been well attended. They have had excellent programs and the information furnished in the addresses and discussions that follow each address has been of inestimable value to the fruit industry of the State of Oregon. The problems this year are many and complicated, more serious than ever before, which makes it all the more important for every fruit grower in the State of Oregon to attend the State Horticultural meeting.

Thanksgiving comes in November. The fruit grower is thankful for what he will receive, but would be more thankful if he received better prices.

The apple crop in the Northwest is the largest in the history of the business, in fact it is unexpectedly large, and is really the first experience the Northwest has had in handling an immense crop. While the growers will suffer considerable loss from not getting their entire crop harvested, as the apples matured very early, and there has been a shortage of help, they will learn a lesson and in future years will be prepared to meet such conditions if they occur again.

Harvesting Season.—Harvesting the 1916 crop has been a serious problem with all fruit growers of the Northwest. Growers were badly handicapped by the scarcity of men for harvesting. The situation was made more serious by the crop overrunning the estimate, and growers had not ordered enough boxes to handle the crop, which was further complicated by a shortage of cars. Late orders for cars of boxes were more or less delayed. The wrapping paper became exhausted, the supply originally ordered being inadequate, and added to these complications the fruit industry of the Northwest has suffered severely from not having experience in handling a large crop.

Yakima Valley Total Apple Crop.

Leading fruit growers and shippers agree that the Yakima Valley will harvest from 6,500 to 7,000 carloads of apples this fall, and while there is considerable difference of opinion regarding how the crop will grade and the prices which probably will be obtained, estimates indicate the crop will have a value of approximately \$4,000,000. The season has been short, spring having been two weeks late, and for this reason there will be many undersized apples, which necessarily will have to be sold at "C" grade prices, increasing the proportion of that grade to 25 per cent of the whole crop. Of the remaining 70 per cent about 40 per cent will be Extra Fancy and 35 per cent Fancy. The indications now are that only the better-keeping varieties will be stored.—Packer.

Everbearing Strawberry Plants

Superb Variety. Will bear from June to November, of large, sweet, red berries, very solid and productive.

Send for descriptive circulars.

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Rides Like An Auto

The New Patented Harvey Bolster Springs are made just like the finest automobile springs. They absorb all the bumps, jars and jerks of rough, uneven roads, and change an ordinary wagon into an easy-riding spring wagon. A set on your wagon will enable you to get your perishable produce to market in first class condition always. Insist on Harvey's. If your dealer can't supply you write us for free catalog and price list.

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SPRAY WITH The New Myers Automatic Power Sprayer

No relief valve. No pump trouble. A strong channel steel frame well braced. The Myers is big capacity, business like outfit and we add the final touch by equipping the outfit with **real power**—

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Myers Spray Pumps—Orchard Machinery

A postal
will bring
you complete
description
and prices

Mitchell
LEWIS & STOVER CO.

PORTLAND, ORE.
SPOKANE, WASH.

Beans An Important Crop

The writer has received reliable information that the demand for beans for export during the past eighteen months has absorbed all beans obtainable, from one end of this country to the other. Even the normal demand for beans for the next twelve months cannot be supplied, and the added call, occasioned by the European war, will tend to make the demand even stronger. This is the year when a farmer with several acres in good tilth will do well to plant this crop. Beans contain as much protein as meat, and because of their low cost, palatability and high food value they have become an important article of daily diet for the soldier at the front, for the prisoner in confinement, among all nations, and it is impossible to overestimate their present export value. Today wholesale dealers are offering four and five dollars a hundred, in carlots, for beans. Our annual supply in the United States is from five to seven million bushels only. This is

hardly enough to supply home consumption, to say nothing of the present enlarged export demand. The great majority of the beans of the nation are grown in Michigan, New York, California, while Maine, Wisconsin, Ohio, Pennsylvania, Iowa, Florida, Virginia and West Virginia are important bean growing states.

The average yield, taken by the United States Crop Statistics Department, is 600 pounds to the acre. Under irrigation, in Colorado, as high as 1,000 to 1,500 pounds per acre have been obtained. A person who will cultivate his beans as he would his corn, planted on anything like reasonably good soil, should be able to obtain from 900 to 1,200 pounds per acre. The market will justify him counting on obtaining better than four cents per pound, or four dollars per hundred. This crop should not be planted until all danger of frost has passed, and great care needs to be given to irrigation of the crop. Consult your county agent or the State College crop man, in reference to both proper cultural methods and irrigation for this crop. Choose that type which your local seed dealer or the special crop man of the college recommends as best adapted to your locality and local market.

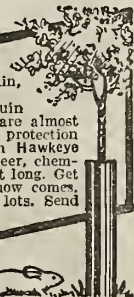
The principal thing is, plan first of all to plant at least a few acres as one side line cash crop. Second, plant in rows sufficiently wide for use of a horse cultivator. Third, keep the crop growing vigorously from the start. Fourth, har-

vest in the irrigated section early in the morning, before the intense rays of the sun render the pods so dry that the beans sell badly. Do not harvest in the field during the heat of the day. The crop should be allowed to come to full maturity, to prevent any shrinkage of the bean. Mexican beans, the Martha Washington (a type of small navy bean) and the kidney bean seem to be Western favorites. The amount of seed required to plant an acre varies with the variety, from forty to seventy-five pounds. Probably the best harvest returns have been obtained when beans were planted in drills rather than hills. For this an average grain seeder can be used for planting, stopping up as many seed tubes in the grain seeder as you

Hawkeye Tree Protectors

Sure,
Certain,
Safe.

One rabbit in a single night can ruin many trees. Trees only girdled are almost worthless. Get dollars' worth of protection at a fraction of a cent cost with Hawkeye Tree Protectors. Made of elm veneer, chemically treated. Easily put on, last long. Get them on your trees before the snow comes. 1c each in 100 lots; 3/4c in 1000 lots. Send for circular and sample.
Burlington Basket Co., 118
Main St., Burlington,
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THE NARROW YUBA

55 inches wide
12 horse power at
the drawbar
20 horse power at
the belt

The powerful little
bull-dog of
tractors made for
service on the
smaller acreages
and especially for
cultivating

Asparagus

Hops

Grapes

Beets

It is narrow enough
to go between
the rows

It has no equal in
the vineyard—it
hugs close to the
trees—goes under
the limbs—turns
in short space—
doesn't pack
the ground

The ball tread
track is 13 inches
wide—it is power
in compact form



Asparagus

The banked-up
rows are narrow—
and soft earth—
the 55-inch Yuba
is the only
machine suitable
for the purpose

Hops

Economy calls
for narrow rows—
there's where the
Yuba works

Grapes

Here's the machine
for vineyards

Beets

The narrow Yuba
helps the beet
grower make
money

Write

The Yuba
Catalogue and
Fall Bulletin will
be sent upon
request.

THE YUBA CONSTRUCTION COMPANY

Department E-501

SAN FRANCISCO

find necessary to give the average width for successful cultivation. The seed should be planted medium shallow, with just enough dirt to cover to give a moist seed bed and insure quick germination. One of the requirements of a good bean crop is quick, sturdy germination, producing a good stand.

The writer believes that beans can be successfully cultivated and irrigated in rows twenty-eight inches apart. It is to be hoped that in small orchards where trees have not yet come into bearing, ground can be occupied between rows with this crop, without injury to the trees and with profit to the grower.—W. H. Olin.

Apples Should Not Be Wasted

[Robert Livingstone, Portland, Oregon,
in Wenatchee Advance.]

I am writing to draw your attention to the large quantity of good fruit which is yearly allowed to waste for want of a market. Last year my crop was light, being only 8,000 boxes from a thirty-acre orchard. Much of it was hail pecked and below grade, and my year's work resulted in a considerable loss. I dumped a carload of apples into the river because they could not pass inspection.

This year my crop is larger, and I have already two carloads of apples which cannot pass inspection because of worm stings, limb bruises and sun scald.

I am thoroughly in accord with the men who wish to maintain the highest standard for Wenatchee apples. But my apples which cannot be placed in any one of the three grades are good apples and could be used for cooking purposes or for eating. Under the present strict regulations I must allow these apples to waste and rot or destroy them in some way.

Now there is something wrong here. Could the rules not be modified so as to allow me to dispose of that fruit in some way? Could it not be marked and sold as low grade fruit? Much of it is so slightly damaged that it would find a ready sale in the poorer districts of the large cities at a small price.

I would gladly donate to charitable institutions my apples that will not pass the inspectors for the ordinary market, and would be willing to pay the freight on it to Portland or Seattle. I am interested in a charitable society in Portland called "The Men's Resort," and we take care of thousands of laboring men during the wet winter months who cannot find employment. It would be a splendid thing if I could donate to that society a few hundred boxes of the apples which I have to throw away. But under the present regulations I cannot do this.

In Great Britain large quantities of good butter are imported every year from Denmark. But much inferior butter is manufactured in England, and it is sold cheap and is called "Oleo Margarine," and the boxes are stamped accordingly. An infringement of the law in this regard is punishable by a severe fine. Now why could not the fruit grower be allowed to stamp and sell his cull apples as "Inferior Grade,"

or under some other name? Anything rather than total destruction of what is really good and wholesome food.

Fruit growing has not been a profitable business for the past three years, and the rules of inspection should help the fruit grower to get all he can out of his crop.

Some way should be available in Wenatchee for utilizing the cull apples. There should be a cider or vinegar factory, and there should also be a plant for drying apples and supplying the markets with this class of by-products.

This subject is of great importance and deserves the attention of your readers.

Protecting Trees from Mice

With the coming of winter and the possibilities of deep snow we should immediately turn our attention to the protection of young trees from the ravages of the field mice. The work of this little animal is greatest in hard winters with deep snows, and the results are many times not detected until we begin spring work in our orchards. They gnaw the bark and often girdle the trunk just at the surface of the ground, making bridge grafting necessary to save the life of the tree. A clean, tidy place harbors few mice, and so it should be with our orchards. See to it that tall grass, weeds and other annual growths which become lodged about the trunks of trees are removed. They make an excellent harbor in which these little animals like to spend the winters.

Cover crops are inductive to the habitation of mice, especially clover and alfalfa, where they are sown in solid blocks throughout the orchard and allowed to grow to a considerable height. A good plan is to mow down the dead stalks for three or four feet around the base and rake it back, leaving the ground clean next to the tree. After the first snow falls, tramp firmly close about the trees, thus compacting the grass so mice cannot find shelter underneath. Another plan that works well where mice are numerous and liable to do damage is to mound up earth around the body of the trees to the height of six to ten inches. This should be removed in the spring after all danger of attack has passed. Border fences of rocks, shrubbery and hedges are excellent harbors for mice. Here they can find shelter and a safe breeding place. The only method to pursue in this case is to plan for their destruction by the use of poisons or repellant washes put on the trunks of the trees.

Methods of Destruction — (1) Wash the trees with some persistent substance in which is placed paris green. Maynard recommends the use of portland cement the consistency of common paint for holding the poison, and applying to trunks of trees with a stiff brush. (2) Strychnine is the most satisfactory poison for field mice. Although a deadly poison and dreaded by many people, yet with the proper caution it can be safely used. Various baits can be used with it, such as wheat, cornmeal, oatmeal and bran. The bait should be

The Cleanest Apple Crop

AND ONE OF THE LARGEST EVER

GROWN IN

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Was sprayed with the

*Sulphur and
the Miscible Oil
Sprays*

**Lime-Sulphur
Spra-Sulphur
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Arsenate of Lead**

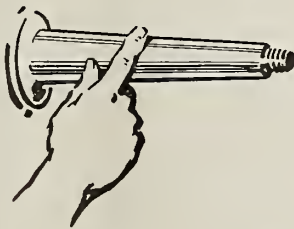
Our Sprays are used and endorsed by the Hood River Apple Growers' Association and the Hood River Experiment Station.

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**No Gumming
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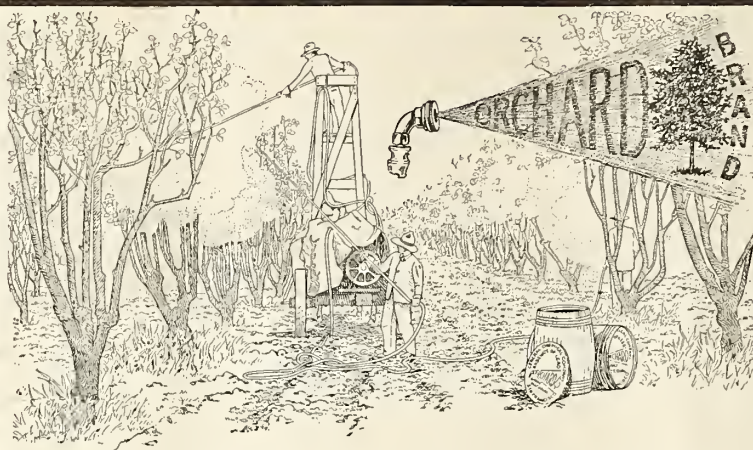
—when you use Mica Axle Grease. The grease is always evenly spread and it *lasts*. Mica Axle Grease would still be good grease even if it contained no powdered mica. But the mica makes it even better. Gives extra lubrication—forms a smoother surface—makes the grease last twice as long. Get a can from your dealer today.

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(California)

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soaked overnight in a poison syrup which may be prepared as follows: Dissolve an ounce of strychnia sulphate in a pint of boiling water, add a pint of thick molasses syrup and stir thoroughly. A few drops of oil of anise may be added to scent the syrup. While hot, pour over one-half bushel of one of the above mentioned baits and mix thoroughly; if too wet, add a little more of the dry material to take up excessive moisture; if not wet enough, add warm

water until the mixture is all wet. There should be moisture enough to wet every particle and yet not enough to make it sloppy and cause dripping. Let the poisoned bait stand over night. Then apply in small bits with a spoon or small paddle in obscure, sheltered places where the farm animals and birds cannot get it, because of the danger of poisoning them.—C. B. Sprague, Assistant Horticulturist, Washington State Agricultural Experiment Station.



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S. W. Foster is the man in charge of the Insecticide Department of the General Chemical Company of California.

The purpose of this Department is to help fruit growers by giving them scientific and practical information concerning orchard pests.

Mr. Foster is a trained entomologist, graduate of Eastern Universities, whose six years' experience in the U. S. Department of Agriculture, five of them on the Pacific Coast, equip him to render expert assistance to you.

The services of this bureau of information are at all times available to you personally.

Call on him for any help you need—it is free.

Orchard Brand products have become the standard spray materials. They are made from exact scientific formulas to produce the most efficient results.

Bordeaux Mixture

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Atomic Sulphur

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If you have any orchard insects or diseases write Mr. Foster, giving him a full description of the pest condition and he will tell you what to use and how to use it.

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C. J. SINSEL, Boise, Idaho.	SAMUEL LONEY & CO., Walla Walla, Washington.
ROGUE RIVER CO-OPERATIVE FRUIT GROWERS' ASSOC., Medford, Oregon.	McGOWAN BROTHERS HARD- WARE CO., Spokane, Washington.

Attend to Your Orchard Spraying Now

General Chemical Company, San Francisco, California
Department F1

Some Apple Movement.

The total shipments from the Northwest now are 3,560 cars, just ten less than the number on the corresponding date last year. Shipments for Saturday and Sunday aggregated 385 cars and were billed to 100 points in 36 different states, showing the wide distribution that is being made this season. Chicago received the greatest number, 54, and New York was second with 35. The market continues in an even course, from the prices given in the daily government report. Jonathans are hanging around \$2 the box, and Grimes Golden about 25 cents less. These two varieties comprise the bulk of the sales, with sprinklings of Winter Bananas and Rome Beauties. Barreled Winesaps are now moving on the markets and are selling from \$3.50 to \$5.—Wenatchee World, October 17, 1916.

Northwestern Apple Distribution

[EDITOR'S NOTE—"Better Fruit" has compiled statistics from the report of daily shipments from the Office of Markets of the Department of Agriculture, co-operating with the Fruit Growers' Agency, from the daily sheets issued. This report appearing below shows the total number of shipments of apples, in carloads, to every city reported, from October 1st to 26th. This report contains much valuable information and is mighty good evidence of the wide distribution of Northwestern apples.]

Austin, Tex. 2	Castleton, N. D. 1
Aberdeen, S. D. 23	Chester, Mont. 2
Amerillo, Tex. 2	Colt, Pa. 1
Anaconda, Mont. 2	Creswell, Oregon. 1
Arkansas City, Ark. 2	Conrad, Mont. 1
Albert Lea, Minn. 7	Centralia, Wash. 1
Alliance, Neb. 2	Clinton, Iowa. 2
Ardmore, Okla. 1	Carthage, Mo. 2
Aneta, N. D. 1	Carter, Wyo. 3
American Falls, Ia. 4	Cardston, Alberta. 1
Albuquerque, N. M. 1	Columbus, Neb. 2
Altus, Okla. 1	Corning 1
Akron, Ohio. 1	Columbus, Okla. 1
Braddock, N. D. 1	Corpus Christi, Tex. 1
Burt, N. Y. 8	Culbertson, Mont. 1
Beaumont, Tex. 3	Camrose, Alberta. 1
Brownwood, Tex. 1	Cook, Neb. 1
Bisbee, Ariz. 2	Carbury, N. D. 1
Bismarck, N. D. 30	Cle Elum, Wash. 1
Baltimore, Md. 107	Casper, Wyo. 5
Boston, Mass. 191	Canora 1
Beatrice, Neb. 2	Chinook 1
Billings, Mont. 28	Council Bluffs, Ia. 2
Buffalo, N. Y. 22	Chateau, Mont. 1
Beach, N. D. 4	Cozad, Neb. 1
Buhl, Idaho 1	Crete 1
Birmingham, Ala. 5	Detroit, Mich. 25
Burlington, Ia. 2	Davenport, Iowa. 2
Butte, Mont. 25	Duluth, Minn. 101
Boise, Idaho 18	Des Moines, Iowa. 26
Bowman, N. D. 5	Durant, Okla. 1
Bridgeport, Conn. 5	Dallas, Tex. 37
Bellingham, Wash. 1	Dickenson, N. D. 3
Basin, Mont. 1	Denver, Colo. 39
Bonham, Tex. 1	Denison, Tex. 6
Bangor, Me. 1	Devils Lake, N. D. 2
Bozeman, Mont. 1	Diamondville, Wyo. 1
Bingham, Neb. 1	Deadwood, N. D. 2
Bird Island, Minn. 1	Dubuque, Iowa. 2
Brookings, S. D. 2	Drake, N. D. 1
Battleford, Sask. 2	Denton 1
Bent, N. Y. 1	Douglas, Ariz. 1
Burke, N. Y. 4	Donneley, Idaho. 1
Bellevue, N. D. 1	Deterick, Idaho. 1
Brigham, Utah 1	Delhart, Tex. 1
Brawley, Cal. 1	Eau Claire, Wis. 2
Brush, Colo. 2	El Paso, Tex. 23
Bend, Oregon 1	Edmonton, Alberta 15
Burley, Idaho 2	Edgeley, N. D. 2
Box Elder, Mont. 1	Evansville, Ind. 2
Baker, Oregon 1	Enid, Okla. 4
Blackfoot, Idaho. 1	Erskine, Minn. 1
Carrington, N. D. 1	Everett, Wash. 3
Chicago, Ill. 540	Edenburg, N. D. 1
Curro, Tex. 2	Elmira, N. Y. 5
Cutbank, Mont. 51	Elgin, Ill. 1
Cheyenne, Wyo. 22	Emmett, Idaho. 1
Concordia, Kan. 2	Eureka, S. D. 1
Cresco, Iowa 1	Fresno, Cal. 1
Coffeyville, Kan. 2	Fort Worth, Tex. 21
Calgary, Alberta. 3	Fargo, N. D. 14
Cincinnati, Ohio. 17	Fort Dodge, Iowa. 2
Cleveland, Ohio. 15	Freeport, Ill. 5
Cushing 1	Fremont, Neb. 1
Corsicana, Tex. 1	Fort Clark, N. D. 1
Columbus, Ohio. 6	Fryberg, N. D. 1
Cedar Rapids, Ia. 2	Flaxville, Mont. 1
Crookston, Minn. 8	Farmers City, Ill. 1
Crawford, Neb. 6	Fort Smith, Ark. 1

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MYERS
WAY

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PUMPS
FOR
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OR DISINFECTING
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ed in fruit growing Fall
Spraying means
healthy trees that will
require but little more care the following
spring. Fall is the season to success-
fully fight scale and similar trees dis-
eases by spraying, and you want the
best equipment obtainable for this work.
MYERS will fill the bill, and whether
your orchards are extensive or include
but a few trees there is a **MYERS** **OUT-
FIT** that will just fit your needs.
Myers Spray Pumps are also adapted
for painting, disinfecting and similar
work.

The Myers Line Includes Bucket, Barrel
and Power Pumps and Complete Outfits
with such improvements as our patented
easy operating Cog Gear Head on Hand
Pumps and Automatic Pressure Control-
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and many other exclusive features
when you purchase a **MYERS**.
Write today for large Catalog—
It's free and a postal will
bring it to your door.

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ASHLAND - OHIO.



YOUR APPLES

Must come East sooner or later.
Why not now before car short-
age, snow banks and what not
will make shipping more uncer-
tain?

We're in excellent position to
store your winter apples and
work them out in such quanti-
ties and at such times as top
prices can be had. Think it over.

Will make reasonable ad-
vances on suitable varieties and
quality for our high class trade.

If you have one or more cars
that you want sold quickly let
them roll to us, for when you
see what our selling service is
you will be glad to do more bus-
iness with us.

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the utmost earnings from your money—how to tell
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sound investments. It reveals how capitalists make
\$1,000 grow to \$22,000—in fact gives you the vital
investing information that should enable you to
make your money grow proportionately. I have de-
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Fairview, Okla.	1	Middleton, Idaho	1
Fulton, S. D.	1	Meyroune, Sask.	1
Grafton, N. D.	1	Memphis, Tenn.	2
Gull Lake, Sask.	1	Marshall, Tex.	1
Great Falls, Mont.	13	New York, N. Y.	613
Grand Forks, N. D.	11	N. Yakima, Wash.	2
Glenwood, Minn.	2	New Orleans, La.	33
Glasgow, Mont.	9	North Platte, Neb.	2
Glendive, Mont.	4	Norfolk, Neb.	3
Great Falls, Mont.	6	Norfolk, Va.	16
Groton, S. D.	3	Nashville, Tenn.	1
Greenville	1	Nampa, Idaho	11
Graw, Iowa	1	New England, N.D.	1
Gr. Rapids, Mich.	2	New York Harbor	1
Grand Island, Neb.	6	New Salem, N. D.	1
Garriso	1	Northgate	1
Guernsey	1	Nacadoches, Tex.	2
Grace, Idaho	1	Norton, Kan.	2
Galveston, Tex.	3	Norcat, Kan.	1
Golden Falls, N. D.	1	Oshkosh, Wis.	1
Garrison, Mont.	1	Olympia, Wash.	29
Goddard, Minn.	1	Omaha, Neb.	202
Granum, Alberta	1	Ottumwa, Iowa	5
Gillette, Wyo.	2	Oakes, N. D.	2
Glenwood, Minn.	1	Ogden, Utah	9
Glens Ferry, Idaho	1	Oklahoma City, Ok.	9
Gooding, Idaho	1	Ortonville, Minn.	2
Globe, Ariz.	1	Onaga	1
Goodland, Idaho	1	Oakland, Cal.	1
Gilman, Mont.	1	Ontario, Oregon	1
Geneva, N. Y.	1	Philadelphia, Pa.	93
Glenullen, N. D.	1	Pocatello, Idaho	8
Hardin, Mont.	2	Portland, Oregon	10
Houston, Tex.	17	Puyallup, Wash.	1
Hutchinson, Kan.	3	Pittsburg, Pa.	20
Havre, Mont.	4	Phoenix, Ariz.	2
Helena, Mont.	7	Parsons, Kan.	1
Hastings, Neb.	2	Peoria, Ill.	9
Harlem, Minn.	1	Providence, R. I.	7
Hartford, Conn.	1	Pendleton, Oregon	3
Hoquiam, Wash.	3	Portland, Me.	2
Hanna, S. D.	1	Pueblo, Colo.	4
Hebron, N. D.	2	Payette, Idaho	8
Hunter	1	Pr. Albert, Alberta	1
Hilger, Mont.	1	Pittsburgh, Kan.	1
Hysham, Mont.	1	Potts, N. D.	1
Halcy, Idaho	1	Poplar, Mont.	1
Heltinger	1	Pendleton, Oregon	2
Hemingford, Neb.	1	Proctor	1
Haynes, N. D.	1	Ritzville, Wash.	1
Huntington, Oregon	3	Regina, Sask.	12
Howard, S. D.	1	Rockford, Ill.	1
Hope, N. D.	1	Rugby, N. D.	5
Indianapolis, Ind.	13	Racine, Wis.	2
Iola, Kan.	3	Rochester, Minn.	1
Idaho Falls, Idaho	3	Richardson, N. D.	1
Joplin, Mo.	3	Round-up, Mont.	2
Janesville, Wis.	1	Red Lodge, Mont.	2
Jersey City, N. J.	8	Rupert, Idaho	4
Judith Gap	1	Ripon, Wis.	1
Judson, Alberta	1	Rawlins, Wyo.	3
Jamestown, N. D.	1	Rock Spngs, Wyo.	4
Kimball, S. D.	1	Rock Lake, N. D.	1
Kansas City, Mo.	148	Rexburg, Idaho	1
Kellogg, Idaho	1	Spokane, Wash.	194
Kerobert	1	Shreveport, La.	5
Kearney, Neb.	4	Sheridan, Wyo.	5
Kinmano, N. D.	1	San Francisco, Cal.	56
Klamath Falls, Or.	2	Saskatoon, Sask.	6
Leonard, N. D.	1	Sumner, Wash.	15
Lexington, Ky.	1	Seattle, Wash.	152
Lairne	1	St. Paul, Minn.	67
Liverpool, England	1	St. Louis, Mo.	34
Laurel, Mont.	9	Shelby, Mont.	8
Lincoln, Neb.	18	Sioux Falls, S. D.	20
Lewiston, Mont.	7	Sidney, Mont.	1
Laramie, Wyo.	6	Springfield, Ill.	6
La Crosse, Wis.	5	San Diego, Cal.	4
Laramore, N. D.	1	Sioux City, Iowa	35
Lamar, Colo.	1	Salina, Kan.	5
Louisville, Ky.	6	St. Joseph, Mo.	8
Lethbridge, Alta.	4	Springfield, Mass.	11
Lake Benton, Minn.	1	Salt Lake, Utah	18
Los Angeles, Cal.	66	Stanley, N. D.	1
Livingstone, Mont.	1	Stanford, Mont.	2
Lewistown, Mont.	3	Stillwater, Minn.	3
Lonnon	1	Sheridan, Wyo.	1
Lincoln, Neb.	3	Swift Current, Sask.	4
Leadville, Colo.	1	Superior, Wis.	2
Langdon, N. D.	1	San Waco, Tex.	1
Las Animas, Colo.	1	St. Johns, N. D.	1
Lubbuck, Tex.	2	Suspension Bridge, N. Y.	17
La Grande, Oregon	2	San Antonio, Tex.	2
Lexington, Tenn.	2	Silver Lake, Minn.	1
Little Rock, Ark.	1	San Angelo, Tex.	1
Minneapolis, Minn.	374	Spiritwood, N. D.	2
Mott, N. D.	3	San Diego, Cal.	3
Minot, N. D.	77	Shreveport, La.	1
Miles City, Mont.	5	Sacramento, Cal.	2
Moosejaw, Sask.	11	Shawnee, Okla.	1
Montreal, Quebec.	4	San Pedro	2
Max, N. D.	3	Silva, N. D.	1
Missoula, Mont.	20	Sykeston, N. D.	1
Mitchell, S. D.	6	Sioux Falls, N. D.	2
Mesa, Ariz.	1	Shoshone, Idaho	1
Milwaukee, Wis.	34	Topeka, Kan.	3
Milner, N. D.	2	Thorn, N. D.	1
Moseow, Idaho	9	Tulsa, Okla.	31
Montpelier, N. D.	6	Thief River Falls, Okla.	2
Maple Creek, Wn.	1	Towner, N. D.	4
Mandan, N. D.	2	Toledo, Ohio	3
Muskogee, Okla.	5	Texas, Wash.	37
Malta, Mont.	1	Tacarkana, Tex.	1
Marshalltown, Ia.	2	Tucson, Ariz.	1
Moorehead, Minn.	1	Toronto, Ont.	6
Mineral Point, Wis.	1	Taylor, Tex.	1
Mankato, Minn.	2	Trinidad, Colo.	4
Minn. Trans., Minn.	2		
Mason City, Iowa	1		
Medicine Hat, Alb.	2		



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Doz. 75c, 100 \$4.75

China Lillies

Each 15c, two 25c, doz. \$1.50

Postpaid.

Grow in pots or glasses—they are sure to bloom.



Temple, Tex.	1	Wallace, Idaho ...	3
Tulea, Neb.	1	Worster, Mass.	4
Tripp, S. D.	1	Wenatchee, Wash. .	1
Twin Falls, Idaho	4	Webster, N. D.	2
Underwood, N. D.	2	Waterloo, Iowa.	1
Valley City, N. D.	11	Weiser, Idaho	1
Victoria, B. C.	3	Wichita, Kan.	5
Vancouver, B. C. .	12	Wendell, Idaho	1
Van Hook, N. D. .	1	Warden, Mont.	1
Virden, Mont.	1	Weldon, Minn.	1
Walton, N. D.	1	Washburn, N. D. .	1
White Fish, Mont.	51	Wheatland, N. D. .	1
Williston, N. D. .	25	Wilkie, Sask.	1
Washington, D. C.	14	Watertown, S. D. .	2
Winnipeg, Man.	19	White Sulphur	
Weyburn, Sask.	11	Springs, Wyo. .	1
Waco, Tex.	13	Yorktown, Sask. .	1
Wahpeton, N. D. .	1	Zealand, N. D.	1

Apple Distribution in the United States

[EDITOR'S NOTE—The following is a sample report mailed daily from the Office of Markets of the Department of Agriculture, Spokane, in connection with the Fruit Growers' Agency. Every grower should read this to fully appreciate the reliable information that is being furnished daily by the Office of Markets, in co-operation with the Fruit Growers' Agency.]

UNITED STATES DEPARTMENT OF AGRICULTURE,
OFFICE OF MARKETS.

Spokane, Washington, October 26, 1916.

Northwestern apples reported shipped yesterday:

Burt, N. Y.	3	Moosejaw, Sask.	1
Boston, Mass.	6	Milwaukee, Wis.	1
Baltimore, Md.	4	Minot, N. D.	2
Bismarck, N. D.	2	New York, N. Y.	7
Butte, Mont.	1	Nampa, Idaho	1
Cincinnati, Ohio .	2	Norfolk, Kan.	1
Council Bluffs, Ia. .	1	New Orleans, La. .	1
Claxeston,	1	Ommaha, Neb.	9
Chicago, Ill.	21	Onaga,	1
Cheyenne, Wyo.	1	Ogden, Utah	1
Crete,	1	Olympia, Wash. .	5
Carrington, N. D. .	1	Oklahoma City, Ok.	2
Crawford, Neb.	1	Pocatello, Idaho .	1
Cutbank, Mont.	1	Payette, Idaho	1
Denver, Colo.	13	Proctor,	1
Duluth, Minn.	7	Philadelphia, Pa. .	6
Dalhart, Tex.	1	Providence, R. I. .	1
Dubuque, Iowa	1	Ritzville, Wash. .	1
El Paso, Tex.	1	Seattle, Wash.	4
Edmonton, Alberta.	1	Spokane, Wash.	8
Fort Worth, Tex.	1	Sioux Falls, S. D. .	2
Fairview, Okla.	1	St. Paul, Minn.	3
Fulton, S. D.	1	Sioux City, Iowa .	2
Gilman, Mont.	1	St. Louis, Mo.	1
Glenwood, Minn.	1	Swiftcurrent, Sask.	1
Great Falls, Mont. .	1	San Diego, Cal.	1
Geneva,	1	San Francisco, Cal.	2
Glenullen, N. D.	1	Suspension Bridge,	
Grand Island, Neb. .	1	N. Y.	1
Grand Forks, N. D. .	1	Winnipeg, Man.	1
Houston, Tex.	1	Williston, N. D.	4
Hysham, Mont.	1	Weyburn, Sask.	1
Hope, N. D.	1	Wheatland, N. D. .	1
Indianapolis, Ind. .	1	White Sulphur	
Jersey City, N. J. .	1	Springs, Wyo. .	1
Kansas City, Mo.	4	Webster, N. D.	1
Los Angeles, Cal. .	4	Watertown, Minn. .	1
Laramie, Wyo.	1	Washington, D. C. .	3
Lethbridge, Alberta.	1	Whitefish, Mont. .	3
Lewistown, Mont. .	1	Underwood,	1
Laurel, Mont.	1	Virden, Mont.	1
Minneapolis, Minn. .	19	Valley City, N. D. .	1
Montpelier, Idaho. .	3		
Medicine Hat, Alta. .	1	Total cars.	197

Not previously reported: 22d, 1 Minneapolis, 1 New York, 1 New Orleans. 23rd, 2 Boston, 2 Baltimore, 1 Boise, 1 Fresno, 4 Los Angeles, 5 New York, 1 Suspension Bridge, 1 San Francisco. 24th, 1 Aberdeen, 1 Detroit, 1 El Reno, Okla., 1 Los Angeles, 1 Pittsburgh, 1 Rock Springs, Wyo., 1 Salt Lake City. 25th, 1 La Grande, Oregon, 1 Salt Lake City. Total 29 cars.

Total shipments to date this season, 5,814 cars. Total shipments same date last season, 48 cars. Total shipments for season same date last year, 5,852 cars.

Divisions reported yesterday: From Minot—1 Brandon, N. D., 1 Grand Forks, 1 Cando, 1 Minneapolis to Grand Forks, 1 Chicago to Fargo, 1 Grand Forks to Larimore, N. D. From Whitefish—1 Cedar Rapids, 1 Chicago, 1 Baltimore, 1 Houston, 1 Minneapolis to New York, 1 Denver to Omaha, 1 Chicago to Milwaukee, 1 Kansas City to New Orleans, 1 Hastings, Neb., to Aberdeen, 1 Laurel to Minneapolis, 1 Freeport, Ill., to Chicago. Shipped Oct. 5—1 Topeka to Manchester, N. H.; Oct. 11—1 Cheyenne to Kansas City; Oct. 12—1 Kansas City to Fort Smith; Oct. 13—1 Omaha to Kansas City; Oct. 14—1 Omaha to Fort Worth, 1 Kansas City to Indianapolis; Oct. 18—1 Cheyenne to Chicago; Oct. 19—1 New York to Boston; Oct. 20—1 Denver to Trinidad, 1 Spokane to Minot; Oct. 21—1 Philadelphia to New York, 1 Omaha to Grand Island.

Apple shipments from other sections: Maine 21, Vermont 10, New York 142, New Jersey 27, Pennsylvania 2, Peninsula 3, Potomac Valley 183, Maryland 2, Virginia 37, Ohio 1, Michigan 38, incomplete, Illinois 16, Iowa 1, Missouri 16, Arkansas 33, Nebraska 6, Kansas 8, Colorado-

32, California unreported, Northwest 197. Total reported for the United States 765 cars, of which approximately 26% were shipped from the Pacific Northwest.

Not previously reported: Tuesday—Ohio 3; Michigan, 3 rail, 25 boat; Missouri 8, Nebraska 1.

TELEGRAPHIC REPORTS TODAY—JOBING PRICES.

Atlanta. Cold, clear. Receipts light. Quality, condition and demand good. Barrels, Virginia, No. 1 Grimes \$5; No. 1 Winesaps \$4.2s \$3.50.

Boston. Cool, clear. Receipts 10 cars Western, 3 Eastern, and approximately 500 packages by freight. Market fair, demand moderate. Barrels, Maine and Massachusetts, No. 1 Baldwins \$2@2.50. Boxes, street sales, Jonathans XF \$2@2.50, Fancy \$1.75@2; Spitzenburgs and Delicious XF \$2.50@2.75; Wageners Fancy \$1.50. Auctioned yesterday, 4 Washington XF Jonathans, average \$1.90, fancy \$1.65; XF Wageners \$1.35@1.80, average \$1.53, Fancy \$1.15@1.50, average \$1.31; XF Grimes \$1.40@2.15, average \$1.80, Fancy \$1.20@1.75, average \$1.31. Stock so far of good quality.

Birmingham. No boxed apples quoted.

Cleveland. Cool, cloudy. Four cars arrived. Market active. Barrels, No. 1 Baldwins \$3.40@3.75.

Cincinnati. Cool. Nine cars arrived, 14 unloaded, 14 held over. Unreported yesterday, 8 cars stored. Market firm, demand moderate. Barrels, Virginia, Grimes, car lots \$4.50; New England, Baldwins, generally good quality and condition, \$3@3.25. Boxes, XF Spitzenburgs \$2.25, Fancy \$2; XF Delicious \$2.50@2.75, Fancy \$2.25@2.50.

Chicago. Cold, cloudy. Receipts 59 cars, 73 held over. Unreported yesterday, 20 cars arrived, 3,500 barrels by boat. Market steady, demand good. Barrels, Illinois and Missouri, Jonathans \$4@5.50, best \$5.50@6; Grimes \$3.50@4.50; New York and Michigan, Baldwins \$2.50@2.75. Boxes, XF Jonathans \$1.75@2, Fancy \$1.50@1.75; XF Grimes \$1.75@2. Auctioned yesterday, Washington, XF Jonathans, average \$1.84.

Charleston. No boxed apples quoted.

Columbus. No boxed apples quoted.

Detroit. Cloudy. Four cars arrived. Market active. Quality and condition good. Barrels, Baldwins \$3.25@3.75.

Denver. Cool, clear. Twelve cars arrived, 10 unloaded; 5 cars diverted, 5 held over. Market steady, demand good. Boxes, Jonathans (few Washington) XF \$1.85, Fancy \$1.60, Choice \$1.35; Grimes XF \$1.95, Fancy \$1.70; XF Romes \$1.95, Fancy \$1.80.

Des Moines. Cold. One car Washington arrived. Demand moderate. Barrels, hold-overs, Jonathans and Grimes \$4.50@5. Boxes, Washington, Grimes \$1.75@2.25.

Dallas. Cool, clear. Receipts heavy. Quality and condition good. Boxes, carlot prices, Colorado, XF Jonathans \$1.65; Washington, Jonathans and Grimes XF \$1.60, Fancy \$1.50.

Fort Worth. Cold, clear. Thirty cars arrived. Demand good. Boxes, carlots, Washington and Colorado, XF Jonathans \$1.75, Fancy \$1.50@1.60; XF Grimes \$1.65, Fancy \$1.50.

Houston. Cool, clear. Supply adequate. Quality and demand good. Boxes, Washington and Colorado, Jonathans and King Davids, XF \$2@2.10, Fancy \$1.75@1.85.

Indianapolis. Cool, clear. Seven cars arrived. Demand good. Barrels, Jonathans \$5@6; Grimes \$4.50@5.50; 2s selling \$1 less.

Jacksonville. Cool, cloudy. Receipts liberal, demand good. Barrels, Virginia, Winesaps, Fancy \$4@4.50, Choice \$3.75@4.25.

Kansas City. Cool, clear. Five cars and approximately 700 bushels home grown unloaded, 12 cars held over. Market firm, demand moderate. Barrels, Jonathans, 1s, good condition, \$1.75@5, mostly \$5, 2s \$3.75@4.50. Boxes, Washington, Jonathans, XF \$1.75@2, mostly \$1.85, Fancy \$1.50@1.75, jumble pack, Fancy \$1.65@1.75; Winter Bananas, Fancy, mostly \$2; Delicious, XF \$2.50@2.65, mostly \$2.65, Fancy \$2.25@2.50; Grimes, Fancy \$1.75@1.85. Colorado, Jonathans, 1s \$1.50@1.75.

Milwaukee. Clear. Four cars arrived. Demand good. Barrels, Fancy Jonathans \$4.50@5.50, Choice \$3@4; Baldwins \$3@3.75. Boxes, Jonathans, XF \$1.75@2.25, Fancy \$1.50@1.75.

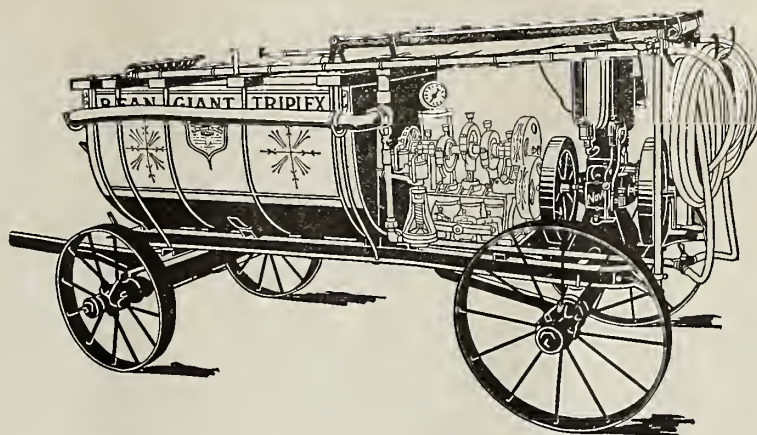
Memphis. Cool, clear. Receipts falling off. Condition good. Virginia, Winesaps \$5@5.25 per barrel.

Minneapolis. Cold, cloudy. Eleven cars arrived, approximately 87 held over. Market steady, demand good for good stock. Condition good. Prices small way. Barrels, Jonathans, good color 1s, \$5.50@6; Baldwins \$4.50@4.75. Boxes, Washington, Jonathans, XF \$2@2.25, mostly \$2@2.10, Fancy \$1.75@2; Spitzenburgs, XF \$2.25; Greenings \$1.60; Delicious O.R. \$1.75.

New Orleans. Cool, clear. Receipts heavy, demand good. Barrels, Virginia, Winesaps \$5.10. Boxes, Washington, Winter Bananas \$2.60, Delicious \$2.45, Spitzenburgs \$2.40, Jonathans \$2.15; Colorado, Jonathans \$1.90.

Nashville. No boxed apples quoted.

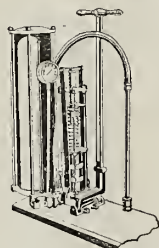
New York. Cool. Unloaded, 68 Eastern, 14 Western. Market steady, demand good. Quality and condition good. Barrels, New York, Baldwins, A \$2.75@3.25, B \$1.75@2.50. Boxes, Washington, Gravensteins \$1.35@1.60, Kings



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\$1.25@1.75; XF Jonathans \$1.75@2.25, Winter Bananas \$1.75@2.50, Grimes \$1.75@2; Romes \$1.50@2.50, Delicious \$2.50@3.00, small size \$1.65, Spitzenburgs \$2.25@2.75. Oregon, Winter Bananas, XF \$1.50@2.50, Fancy \$1.65@2.25; Kings \$1.25@1.75. Auctioned yesterday, 1 ear Idaho. Demand good. Market slightly higher. Jonathans average \$1.62, Winesaps \$1.59, Grimes \$1.26.

Omaha. Four cars arrived. Market active. Quality and condition good. Barrels, Nebraska, Missouri and Iowa, Jonathans and Grimes \$1.50@5; Winesaps \$3.75. Boxes, Jonathans and Grimes, Washingtons, \$1.50@2.

Oklahoma City. No boxed apples quoted.
Philadelphia. Cool, clear. Arrived 19 cars, 20 unloaded, 9 on track. Market strong, demand good. Quality and condition good. Barrels, Jonathans, poor quality, \$4.50; 1 ear Jonathans auctioned, XF averaging \$1.91, Fancy \$1.81 per box.

Pittsburgh. Cool, clear. Arrived 12 cars, 63 held over. Market firm, demand good for good stock. Barrels, New York, Baldwins, A grade, fair quality, \$3. Boxes, Washington, Jonathans XF, small way, \$2@2.50; Winter Bananas, XF \$2.10@3.25, Fancy \$2.50@2.75.

St. Louis. Cold. Arrived 10 cars, 10 unloaded, incomplete; 41 cars on track, incomplete. Unreported yesterday, 4,400 bbls. by boat. Levee sales yesterday, barrels, Winesaps \$3.65@4, 2s \$2@2.50; Washington, Jonathans, XF \$1.90@2, Fancy \$1.75, small way.

Sioux City. Clear. Arrived 2 cars Washington. Quality good. Boxes, Jonathans \$1.75@2.

San Antonio. Cool, clear. Receipts moderate. Quality good. Boxes, carlot prices, Jonathans, XF \$1.65, Fancy \$1.40, Choice \$1.35; Winesaps, XF \$1.75, Fancy \$1.55; Ganos, XF \$1.55, Fancy \$1.40; Bens, XF \$1.45, Fancy \$1.30.

St. Paul. Cold, cloudy. Receipts 5 cars, 18 held over. Market draggy. Barrels, Jonathans, XF \$5.50@6, 1s \$5@5.50. Boxes, Missouri, Winesaps, mostly \$1.65; Washington, Jonathans, XF mostly \$2, Fancy \$1.75.

Washington. Cool, clear. Arrived 5 cars, 7 unloaded. Market slow. Virginia and West Virginia, Grimes \$1.75@5, mostly \$1.75; Winesaps \$3.50@4. Boxes, Washington, Jonathans and Grimes, XF and Fancy, \$2.00.

Only Jonathans, Grimes, Winesaps and Baldwins are covered in quotations on barreled varieties.

E. E. BAKER,
C. W. KITCHEN.

Prunes Bring Good Price.

T. G. King, of Miller and Red Apple Road, has sold his prune crop amounting to fourteen cars to the Walla Walla Fruit Company, of Walla Walla, at 80 cents the box for all packing out six by six and better. He has already started shipping in car lots. He, together with Dr. A. H. Saunders, own the only large orchards of prunes in the valley.—Wenatchee World.

Inspector Must Inspect.

Horticultural Inspector De Sellem has served notice on shippers that in order for his deputies to give shipments of apples an inspection certificate the apples must be actually inspected and that the practice of some shippers of loading a car, bracing it and then calling an inspector just before locking the door, expecting the inspector to take a look inside and issue a certificate that the apples therein are of the quality and pack represented, must cease. Mr. De Sellem also again reminds shippers that his office must have twenty-four hours' notice that inspection is desired, as his deputies are very busy and one is not always immediately available.—Yakima Republic.

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Spokane Apple Show, Nov. 20-25

Some Field Notes on Making Ditches with Explosives

There seems to be great differences in the response of different soils to the action of explosives. In going over the figures and the record pictures of a dozen or more ditches that had been blasted out, in Maryland, Pennsylvania, Michigan, Louisiana, Mississippi and other states, it was plain that no one rule could be laid down for all cases. Economical ditch blasting can be done only when the ground is wet. Yet if it is too wet experience has shown that a successful ditch cannot be made. For instance, in muck swamps in Maryland and Louisiana, where the material was semi-fluid, the explosives threw out enough material to leave a ditch, but the banks immediately moved in and closed up the cavity. Fortunately these conditions do not prevail at all over a large part of the country. Such ground is almost unknown in the North. Sandy soil offers another problem. When there is just enough water to bind the sand and what little loam and clay may be mixed with it, and not enough to make the sand soft, ditches can be blasted out very effectively and satisfactorily. You should see that the charges are placed shallow enough so that they do not tend to send their gases to useless depths in the softer subsoil. Do not try to blast ditches in dry sand, or, for that matter, in dry ground of any kind, though if you cannot wait for the wet season and are willing to meet an increased expense, you can blast ditches through dry clay or heavy loam. The most economical and satisfactory soils in which to blast ditches are the lighter cleays or heavy loams, such as prevail in parts of Michigan, Western Maryland, Pennsylvania and in many other states. Here, whenever the ground is water-soaked, or even fairly moist, the results of blasting are surprisingly good. One reason probably is that the substrata of earth nearly always are solid and gas-resisting.—J. R. Mattern.

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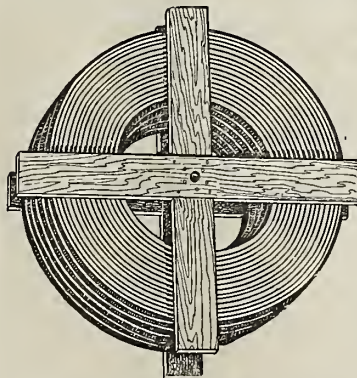
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Activities of the Fruit Growers' Agency, Incorporated

The Fruit Growers' Agency, Incorporated, is already proving itself of great value to the grower through its activities along many lines, although it has only been organized since last March. The principal activities of this office at the present time may be summarized as follows: Daily "Market News Service" based on telegraphic reports over a direct wire from Washington, D. C. This service is conducted by Mr. C. W. Kitchen, Market Station Assistant, assisted by Mr. H. A. Harris, also of the Office of Markets. Special service pertaining to "Uniform Account Sales" and "Accounting Methods," conducted by Mr. G. A. Nahstoll, assistant in Market Business Practice, of the Office of Markets. An assistant will be assigned to Mr. Nahstoll in the near future to enable him to make more frequent visits to the various districts. Special investigation of packing houses and storage facilities, conducted by Mr. C. T. More. Mr. More is now in Washington to consult with his chief regarding this work, after having made a preliminary survey of the situation in the Northwest. "Rendering of Crop Estimates Secured in Conjunction with State Authorities." It has been unable to secure any definite crop reports from either Oregon, Idaho or Montana, but a complete estimate of the tonnage for the State of Washington was furnished us July 9, and a revised estimate is now being prepared. The Office keeps in close touch with the above named officials of the Office of Markets and state officials, and renders such assistance as may be needed. Frequent conferences are held between these officials and the officials of the Agency to secure the best possible results.

The Agency has also taken up a number of matters relating to transportation questions. It is evident that more can be accomplished along these lines by a body composed of a number of organizations representing 80 per cent of the entire tonnage of the Northwest than by any one organization. The following are some of the subjects referred to: (1) Diversion privileges to Canadian points; (2) Adjustment of diversion charges; (3) Storage in transit privileges into certain Eastern points; (4) Precooling and original icing by shippers; (5) Transportation rates on ocean freight; (6) Report of railroad at destination; (7) Adjustment of rates into territory east of the Mississippi and south of the Ohio River; (8) Adjustment of rates on Oroville branch. In addition there are numerous other matters that are looked after by the Agency, which will be reported from time to time.

A Cross-Continent Record.

In the first round-trip ocean-to-ocean run to be made by any automobile against time, the Hudson Super-Six which reached San Francisco Sunday morning, September 24, 1916, in both the going and return trips broke the best previous one-way records. The

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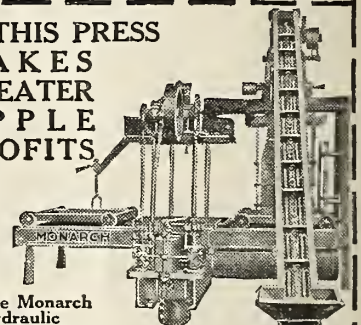
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round trip from San Francisco to New York was made in 10 days 21 hours 3 minutes. Last spring the best one-way record from coast to coast was 7 days 8 hours. The Super-Six used was a seven-passenger touring car and carried at all times three and sometimes four passengers. Previous one-way records were established with roadster and stripped models. On the return trip the car was 1½ hours ahead of its going schedule up to within 250 miles of the finish. On account of heavy rains in crossing the Sierra Nevada Mountains 15 hours more time was required to cover that leg than was taken in the going trip. The average speed going and coming, including all stops and slowing down to speed requirements of more than 350 cities, towns and villages passed through each way, was close to 700 miles a day. Three drivers, Ralph Mulford, A. H. Patterson and Charles Vincent, by making train jumps, piloted the car on its round trip across the continent.

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COME OFF-- RIGHT-CUT IS THE REAL TOBACCO CHEW, SO POKE YOUR OWN JAW.

WAIT, BOYS YOU'RE BOTH RIGHT-- W-B CUT IS LONG SHRED, RIGHT-CUT IS SHORT SHRED, BUT BOTH ARE THE REAL TOBACCO CHEW. NOW SHAKE HANDS.



YOU want to remember that the same fine stock is used in both W-B CUT and Right-Cut. The difference is that one is long shred and the other is short shred, both seasoned with a bit of salt. You will know *real tobacco satisfaction* when you cut out the old kind and take up either one of the Real Tobacco Chew twins. *A little chew lasts and satisfies.*

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Ask your grocer or market man for apples.

"Health's best way, eat apples every day."

Good Gasoline Easily Obtainable.

A certain prominent automobile manufacturer stated, in a recent newspaper article, that his new motor was especially designed to handle low grade gasoline, or "poor gasoline," as he put it. "High test gasoline," he said, "is not easily obtainable in the most favored localities." Commenting on this article, C. H. Hamilton, district sales manager of the Standard Oil Company, said yesterday: "Evidently the Pacific Coast was overlooked by this manufacturer in making up his list of 'most favored localities.' Otherwise his statement regarding the scarcity of good gasoline wouldn't hold good. For Pacific Coast motorists, at least, should have no difficulty whatsoever in obtaining pure, high test distilled gasoline. Our company has been for years, and now is, putting out only this real good old-fashioned all-refinery unmixed gas, and our distributing machinery has put this gasoline into practically every town and hamlet on the Pacific Coast. There's no need for the Pacific Coast motorist to go without good gasoline."—Adv.

Middle aged men who are not able to do hard manual work, but who must earn a livelihood, can make good money selling home orders of our Fruits, Flowers, Roses, Shrubs and Ornamental Trees. Farmers and Fruit Growers are getting the highest level of prices for their products in twenty-five years, and are going to improve their homes. Our best men are selling from \$500 to \$700 per week—average men from \$100 to \$500. OUR NEW AGENTS CONTRACT IS A WINNER. Write at once for territory. PACIFIC NURSERY COMPANY, 122½ Grand Avenue, Portland, Oregon.

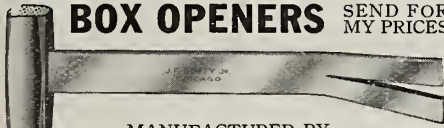
Propagating Roses by Fall Cuttings.

Climbing roses are propagated mostly by hardwood cuttings made in the fall; many cut-flower roses may be propagated in the same way. Hardwood cuttings are taken from the dormant wood of winter, while softwood or greenwood cuttings are taken when the plants are in active growth. To make a hardwood cutting, good, strong, well ripened shoots of the past summer's growth should be selected. These are better if cut between the time the leaves fall and freezing weather. If left until after cold weather there is danger of injury from freezing. They should be cut into pieces of five or six inches, with the upper cut just above a bud, and should be tied in bundles with raffia or with string that does not rot easily if exposed to dampness. After labeling plainly they should be buried in moist sand, tops down, and placed in a cool cellar or buried in the open ground below danger of frost. They should be planted in the open ground in the spring about or a little before corn-planting time, so that one or two eyes, or not over one inch of the cutting is above ground, which will leave four or five inches in the ground. Care must be taken not to injure the calluses that have formed while the cuttings were buried. Sometimes better results are obtained by planting in partial shade. Frequently cuttings made in winter or early spring do nearly as well as those made in the fall, but in the North there is always danger of the wood being injured during the winter.—Office of Information, United States Department of Agriculture.

Fairs, Land and Apple Shows

Ninth National Apple Show, Spokane, Washington, November 20-25.
Northwest Livestock Show, Lewiston, Idaho, November 26 to December 2.
Cascade International Stock Show, North Yakima, Washington, November 27 to December 2.
International Livestock Exposition, Chicago, Illinois, December 2-9.
Pacific International Livestock Exposition, North Portland, Oregon, December 4-9.
National Western Stock Show, Denver, Colorado, January 20-27.

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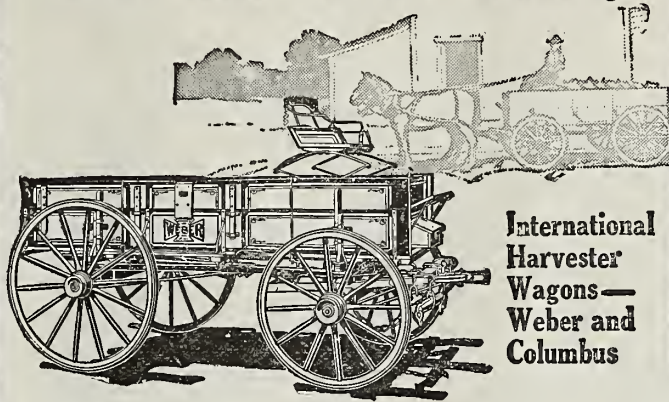


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YOU can be sure of one thing when you buy a **Weber or Columbus** wagon—You get more service for your money. The good service they give is one of the strongest features of **Weber and Columbus** wagons. This service is the result of careful design and construction, such as is shown in the **International fifth wheel**.

Look between the front axle and bolster, where the king bolt goes through. There you will find the fifth wheel (an exclusive feature). Note the wide circular wearing surface of the two substantial fifth wheel plates. Those plates relieve the owner of a lot of trouble. They prevent breaking or bending of circle irons. They prevent the pitching of the bolster that breaks or bends king bolts. They take strain off the reach and keep the lower part of the front axle from sagging.

This one feature adds years to the life of the wagon, but, better even than that, it indicates the care and thought that have been given to every **Columbus** and **Weber** feature, and they are many.

Look over the **Weber or Columbus** wagon carefully, either at the local dealer's place or in the illustrated wagon folders we will send you on request. Then you will see why, if you want more for your money, your next wagon should be a **Weber or Columbus**.

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In straight or mixed cars.

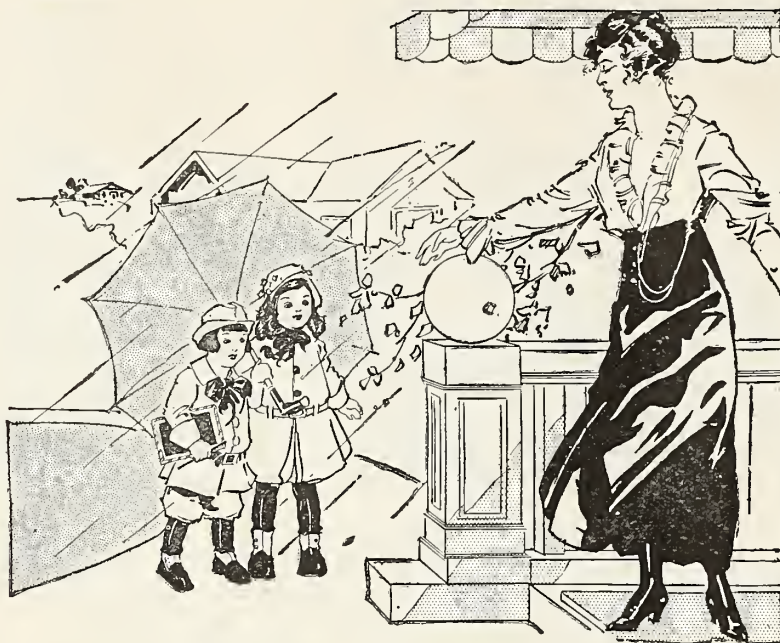
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The Fruit Growers' Agency, Inc.

The Federal Office of Markets is investigating the problem of central packing houses and the standardization of fruit grading. W. M. Scott, specialist in fruit grading and standardization, together with C. T. More, specialist of the investigation of grades and standards, both of the Office of Markets, have just completed an extensive trip throughout the Northwest with a view to familiarizing themselves with Northwestern conditions. Mr. More has returned to the East, where he was called by the Department, while Mr. Scott will remain in the Northwest throughout the coming apple season completing his investigations. The problem of central packing houses is an important one for the apple industry. If some efficient and satisfactory plan can be evolved whereby all the fruit in a particular section can be sorted and packed at one house, the problem of packing will not only be simplified, but greater efficiency and standardization will be possible. The central packing house is already being tried by some of the districts of the Northwest. This problem is only one of many which is being studied as the result of the activities of The Fruit Growers' Agency.

Clean Up Your Garden.

If the weeds have flourished in your garden, or in parts of it, mow them down, now. If they have not gone to seed they can be plowed under later to help out the stable manure you apply, but if they have they should be removed from the garden and thrown on the compost heap; composting kills weed seed.

Weeds are expensive things to have in gardens, or anywhere else; they rob garden crops of food and moisture; many of them are natural food for all kinds of insects, which when they have devoured the choice parts of weeds attack adjacent garden crops. Weeds may also support plant diseases that would



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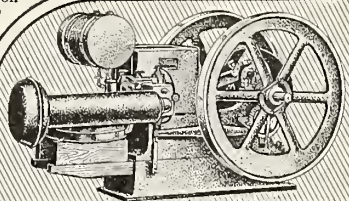
SO far as actual engine value is concerned, I would be justified in charging double the present prices for WITTE Engines. Great factory efficiency and selling direct from factory to user makes these prices possible.

I would rather manufacture 10,000 engines a year at a profit of one dollar each, than only 1000 engines at \$10 each, or 100 at \$100 profit each. Every engine I sell helps sell others.

It has been proven that **quantity** production makes production cost low. I could not build WITTE engines so good if I built only **hundreds** while I build **thousands**. A man, for example, who turns fly wheels all day can do a **quicker** job and **better** job than if he worked at it only a half hour each day and then ran a truck or swept the floor and worked on pistons the rest of the time. In the big WITTE factory, a man becomes an expert in making his particular part of the engine. My actual cost for high quality engine parts is from $\frac{1}{2}$ to $\frac{3}{4}$ what many others pay. My own private gas

well to furnish power helps hold cost down.
WITTE Engines require only one-tenth of one gallon of fuel per horse-power per hour; develop from 30 to 50 percent surplus power over rating. Made in 2, 3, 4, 6, 8, 12, 16 and 22 H.P., sizes in different styles, as ordered to operate on Kerosene, Gasoline, Naphtha, Distillate or Gas, also in stationary, hand portable, portable and saw-rig. **90-Days' Trial; 5-Year Guarantee.** Cash or Terms. Write today for big free book, "How to Judge Engines."—Ed. H. Witte.

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otherwise die, and they induce mildews and rusts by reducing air and sunlight around the garden plants. These weeds are now going to seed; winter winds will jar that seed out, and the chances for a heavy stand of weeds next spring will be quite good.

Other good things to remove now, and as the later crops mature, are the crop remnants, especially if there has been disease or insect infestation. Dead stalks are wintering-over places for diseases and insects.

Stalks removed had best be burned, though if a compost pile is made the insect-infested stalks may be thrown on it. Disease spores survive the composting temperature; burning is safest.—J. S. Gardner, Missouri College of Agriculture.

Notes on the Gas-Action of Farm Explosives.

Of late years there has come on the market, in response to a growing demand from farmers, explosives particularly suited to their work. The coal miner has his particular kind and grade of dynamite and powder, and the rock and quarry man his kinds. Too often the mine and rock powders and dynamites have been sold for farm purposes, and the result has been that the stump blasting, or subsoiling, or ditching, has not been done as it should have been, either in cost or effectiveness.

For removing stumps, and more particularly for soil tillage with explosives, a certain comparatively slow, lifting, heaving and cracking gas action is wanted. This is totally different from the quick, sharp, shattering and cutting action of most mine and quarry explosives. The proper farm powder will produce an entirely different condition in the soil than will an explosive which is best to use for breaking up stone. The blasting of earth, particularly dry earth, and the removing of roots from the earth, is an entirely different proposition from the blasting of stone. In fact, the stone explosive cannot be used with satisfaction in soil work. You cannot get the effect desired.

Another thing that should be more generally known is that the right kind of farm powder will cost you less than the stone or mine explosive. It is made with an ammonia base instead of a nitroglycerine base, and in these days of war nitroglycerine is a mighty expensive commodity. The average 40%

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Carloads or less. Get our prices.

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Around your car, in
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Old Dutch

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THE STANDARD OIL COMPANY'S

It's all power
because it's all re-
fined gasoline—not
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**RHODES DOUBLE CUT
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THE only
pruner
made that cuts
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dynamite is both expensive and inefficient for farm work, compared to the right kind of farm powder. The farm powder is somewhat safer than the dynamite, too, because it requires more of a shock to explode it.

Apple picking is made easier if the weeds are mowed in the orchard and the place kept clean. Pickers are disgruntled and do poor work where they have to wade through weeds and briars wet with dew or autumn rains.

OFFICE OF
THE FRUIT GROWERS AGENCY, INC.
Walla Walla, Washington.

September 12, 1916.

For the purpose of giving the growers and selling agents of the Northwest better news service on fruit movements, branch offices have been opened by The Fruit Growers Agency in the Federal Building in Spokane. The Agency thus has the advantage of a central location, with the best telegraphic and mail service. The news service as given on summer fruits will be continued on apple shipments, and additional services will be added.

Several representatives of the Office of Markets from Washington are now working in the Northwest for the efficiency of this department. W. A. Sherman, specialist in market service survey, together with his assistant, O. W. Schleussner, are collecting data and making arrangements for a more extensive news service. C. E. Bassett, well known as chairman of the committee which helped to organize The Fruit Growers Agency, is also working in the Northwest.

Due largely to the activity of the Agency, the railroads have granted diversion privileges for fruit shipments from the Northwest to Canadian points. The Agency is also making particular efforts with the object of securing storage in transit privileges for apples and pre-cooling and initial icing privileges.

The Agency is giving special service to its members by way of weekly bulletins containing telegraphic reports on Canadian markets. These reports are received directly from the Department of Agriculture at Ottawa and are compiled by them. They show the market prices on different fruits in the principal Canadian markets and are of great value to growers and shippers sending fruit to Canadian points.

Corvallis, Oregon, Sept. 26, 1916.

Editor Better Fruit:

Yours of the 23rd received. I was exceedingly glad to learn that the crop in Hood River is going to be so large. With you, I realize that the growers are becoming encouraged and their confidence is being restored. The fruit growers of the State of Oregon and of the entire Northwest have an opportunity this year to feel mighty good. Crops have been large and of splendid quality, and prices are fine. The pear men have never received better prices than they have this year. Many prunes are contracted at seven cents. Loganberries are now being contracted for three to five years on a three-cent base. There are more orders for raspberries, blackberries, etc., than the growers can fill. Buyers are here trying to contract for the crop of nuts, such as walnuts, filberts, and apple prices are going good. Surely it looks as though the depression which came upon Western horticulture is being released and we are entering a new era of prosperity.

We should, however, be on our guard. Whenever we are exceedingly prosperous it is very difficult to organize and to come down to a realization of what the real problems are. The next year or two this prosperity means greater and harder work for the leaders of horticulture to try to put on the finishing touches of organization and co-operation, which are so essential to a permanent success in our Pacific Northwest. There always have been periods of depression: that is true of all phases of agriculture, and it can be expected to be true in the future. However, much could be done to relieve the pressure in future years, and to take steps to prevent the re-occurrence of some of the things we have experienced in the past ten years. From present indications there is going to be quite a large development in Oregon during the coming year, especially along such lines as walnuts and filberts, prunes and berries.

With kind regards, I remain, sincerely yours,

C. I. LEWIS,
Chief, Division of Horticulture,
Oregon Agricultural College.

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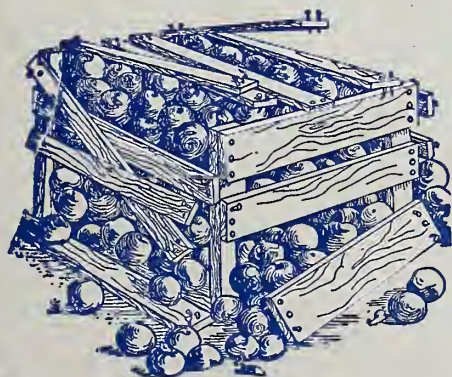
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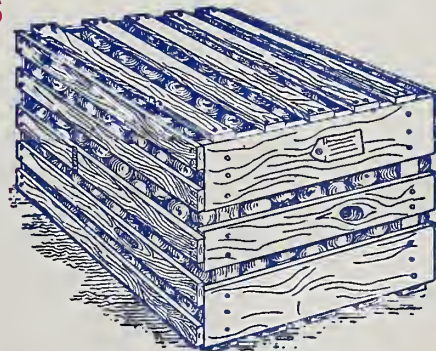
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